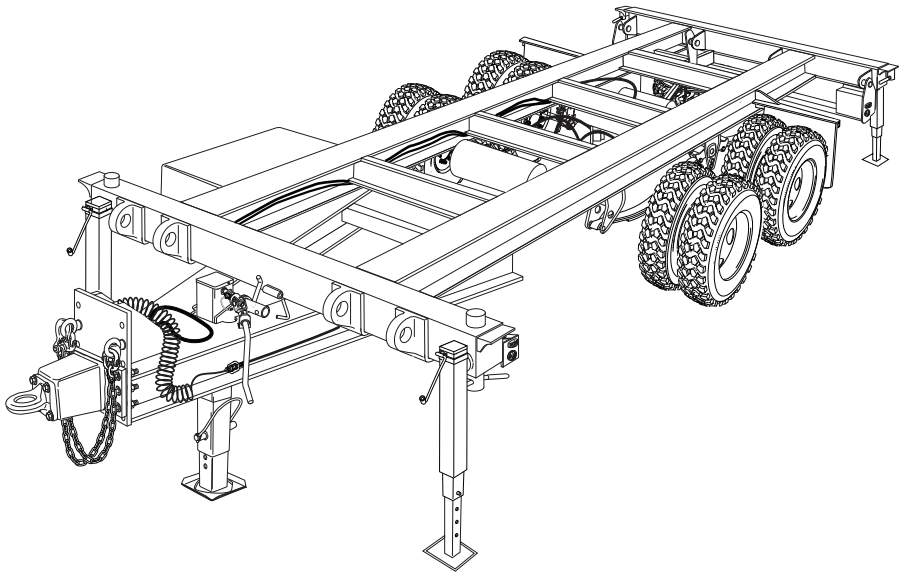
TM 9-2330-328-13&P

TECHNICAL MANUAL

OPERATOR AND FIELD MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL) FOR

CHASSIS, CONTAINERIZED KITCHEN TRAILER: 7 1/2-TON, 4-WHEEL XCK2000 NSN 2330-01-471-7006

TRAILER: 7 1/2-TON, 4-WHEEL XCK2000E1 NSN 2330-01-506-5979



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HEADQUARTERS, DEPARTMENT OF THE ARMY, WASHINGTON D.C.

07 DECEMBER 2015

WARNING SUMMARY

FIRST AID

First aid is defined as "urgent and immediate lifesaving and other measures, which may be performed for casualties by nonmedical personnel when medical personnel are not immediately available."

FOR MORE INFORMATION ON FIRST AID, REFER TO FM 4-25.11.

EXPLANATION OF SAFETY WARNING ICONS

ELECTRICAL - Electrical wire to arm with electricity symbol running through human body shows that shock hazard is present.

FALLING PARTS - Arrow bouncing off human shoulder and head shows that falling parts present a danger to life or limb.

FLYING PARTICLES - Arrows bouncing off face shield show that particles flying through the air will harm face.

HEAVY OBJECT - Human figure stooping over heavy object shows physical injury potential from improper lifting technique.

HEAVY PARTS - Foot with heavy object on top shows that heavy parts can crush and harm.

HEAVY PARTS - Hand with heavy object on top shows that heavy parts can crush and harm.

HEAVY PARTS - Heavy object on human figure shows that heavy parts present a danger to life or limb.

HEAVY PARTS - Heavy object pinning human figure against wall shows that heavy, moving parts present a danger to life or limb.

HOT AREA - Hand over object radiating heat shows that part is hot and can burn.

WARNING SUMMARY - Continued

EXPLANATION OF SAFETY WARNING ICONS - Continued

SHARP OBJECT - Pointed object in hand shows that a sharp object presents a danger to limb.

GENERAL SAFETY WARNING DESCRIPTION

WARNING

- DO NOT disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity and hit you in the face. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Wear eye protection when opening drain valve to prevent objects from hitting you in the face. Avoid contact with air stream to prevent burns to your skin. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Tire may still be under pressure. Wear eye protection when removing penetrating object from tire to prevent objects from hitting you in the face or eyes. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

WARNING

- DO NOT use air pressure or a steel bristle brush to clean cones and rollers. Use approved cleaning solvent to clean bearings. DO NOT use gasoline. DO NOT rotate bearings using compressed air as this will damage the polished surfaces. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Particles from grinding operations are hazardous to the eyes. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Wear eye protection when under trailer to prevent objects from hitting you in the eyes. Failure to comply may result in personnel injury. Seek medical attention in event of injury.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNING DESCRIPTION - Continued

WARNING

- Suitable support devices must be positioned under the axle to prevent slippage. Suitable support devices with a minimum rating of 30,000 lb (13,608 kg) and assistance will be needed to perform this task. Failure to comply may result in personnel death, injury, or equipment damage. Seek medical attention in event of injury.
- Suitable support devices must be positioned under the lunette to prevent the trailer from dropping. Suitable support devices with a minimum rating of 30,000 lb (13,608 kg) and assistance will be needed to perform this task. Suitable support devices must be used only on a hard, level surface to prevent shifting or dropping. The trailer wheels must be chocked. Direct all other personnel to stay clear of the trailer while landing leg is removed. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.
- Suitable support devices must be positioned directly under trailer frame to prevent slippage. Suitable support devices with a minimum rating of 30,000 lb (13,608 kg) and assistance will be needed to perform this task. Suitable support devices must be used only on a hard, level surface to prevent shifting of trailer. Use wheel chocks. Direct all personnel to stay clear of trailer when supported in air. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.
- Lifting device must have a minimum rating of 30,000 lb (13,608 kg) to safely lift the weight of trailer and container. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.
- All personnel must stand clear of prime mover and trailer during coupling and uncoupling operations to prevent being hit or crushed. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.
- DO NOT use the leveling jacks to lift the trailer off the ground. The leveling jacks do not provide enough stability to safely lift the trailer off the ground. The trailer may drop resulting in personnel death, injury, or equipment damage. Seek medical attention in event of injury.
- At semiannual brake inspection/service, all brake wheel end components must be cleaned and inspected for wear and damage. Inspect all linings, springs, pins, rollers, clips, and bushings on each axle end. Ensure seals show no signs of leakage on axle, spider, or wheels. Use all components of replacement kits, and balance repairs on both axle ends. Failure to comply may result in personnel injury or equipment damage. Seek medical attention in event of injury.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNING DESCRIPTION - Continued

WARNING

- Axle weighs 225 lb (102 kg). Suitable lifting devices rated at a minimum of 450 lb (204 kg), and assistance will be needed to perform this procedure. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.
- Spare tire and wheel assembly weighs 200 lb (91 kg). Assistance will be needed to perform this procedure. Failure to comply may result in personnel injury. Seek medical attention in event of injury.
- Each spring weighs 175 lb (79 kg). Suitable lifting devices rated at a minimum of 250 lb (113 kg), and assistance will be needed to perform this procedure. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.
- Hub and drum assembly weighs 90 lb (41 kg). Assistance will be needed to perform this procedure. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Landing leg weighs 95 lb (43 kg) and must be supported to prevent it from falling. Suitable lifting device rated at a minimum of 150 lb (68 kg) and assistance will be needed to perform this procedure. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.
- Lunette weighs 75 lb (34 kg). Assistance will be needed to perform this procedure. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Bumper weighs approximately 90 lb (41 kg). Assistance will be needed to perform this procedure. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Tool box weighs approximately 75 lb (34 kg) and must be supported to prevent it from slipping or falling. Suitable support device(s) rated at a minimum of 150 lb (68 kg) and assistance will be needed to perform this procedure. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

WARNING

Disconnect electrical power from trailer before performing any cleaning or maintenance of electrical system. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNING DESCRIPTION - Continued

WARNING

- A hot brake drum can cause serious burns. Exercise extreme caution before attempting to touch brake drum after use. Radiated heat will be felt before brake drum is touched. Failure to comply may result in personnel injury. Seek medical attention in event of injury.
- DO NOT touch heat shrinkable tubing for at least 30 seconds after heating. Heat shrinkable tubing is hot and will burn you. Failure to comply may result in personnel injury. Seek medical attention in event of injury.

WARNING

- To prevent injury, keep hands away from brake chamber pushrods and slack adjusters. They will move as service brakes are operated and will automatically apply if system pressure drops. Hands and fingers may be pinched or cut by moving parts. Failure to comply may result in personnel injury. Seek medical attention in event of injury.
- Disassembly of spring brake chambers is NOT authorized. When inspecting or caging spring brake chambers, DO NOT position yourself in front of or in line with the chamber. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Wear eye protection when under trailer to prevent objects from hitting you in the eyes. Failure to comply may result in personnel injury. Seek medical attention in event of injury.

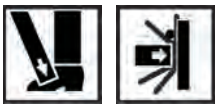
WARNING SUMMARY - Continued

GENERAL SAFETY WARNING DESCRIPTION - Continued

WARNING

- Caging the spring brake chambers is an emergency procedure. This is to be used only to move the trailer off the traveled portion of the road when a brake line or other part fails causing loss of air brake system air pressure. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.
- All spring brake chambers must be caged before you work on the air brake system. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.
- Before performing any work on the air brake system, chock front and rear wheels to prevent trailer movement. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Spring in spring brake chamber is under 2,500 lbF (1,134 kgM) of force. When inspecting or caging spring brake chambers, DO NOT position yourself in front of, or in line with, the chamber. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Never strike any part of the spring brake with a hammer or any other heavy object. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.
- DO NOT drop spring brake as compression spring may forcefully release. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.
- DO NOT use prime mover air pressure or power driven impact tools to cage the spring brake chamber. Excessive torque can cause damage to the spring pressure plate resulting in sudden release of the spring. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

WARNING



Chock wheels to prevent trailer movement. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

WARNING SUMMARY - Continued

EXPLANATION OF HAZARDOUS MATERIALS ICONS

BIOLOGICAL - Abstract symbol bug shows that a material may contain bacteria or viruses that present a danger to life or health.

CHEMICAL - Drop of liquid on hand shows that the material will cause burns or irritation to human skin or tissue.

EYE PROTECTION - Person with goggles shows that material will injure the eyes.

FIRE - Flames show that a material may ignite and cause burns.

POISON - Skull and crossbones shows that a material is poisonous or is a danger to life.

VAPOR - Human figure in a cloud shows that material vapors present a danger to life or health.

WARNING SUMMARY - Continued

GENERAL HAZARDOUS MATERIALS WARNING DESCRIPTION

WARNING

- Solvent cleaning compound MIL-PRF-680 may be irritating to the eyes and skin. Wear protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Use solvent cleaning compound MIL-PRF-680 in a well-ventilated area. Use respirator as needed. Accidental ingestion can cause irritation of digestive tract and respiratory tract. May cause lung and central nervous system damage. Can be fatal if swallowed. Inhalation of high/massive concentrations can cause coma or be fatal. First aid for ingestion: DO NOT induce vomiting. Seek immediate medical attention. First aid for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- MIL-PRF-680 solvent is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. When not using MIL-PRF-680 solvents, ensure MIL-PRF-680 solvent container is closed. Store, transport, and dispose of virgin/used solvents and solvent contaminated rags in compliance with local procedures and regulations. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Improper cleaning methods and use of unauthorized cleaning liquids or solvents can injure personnel and damage equipment. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of in accordance with authorized facility procedures. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

WARNING SUMMARY - Continued

GENERAL HAZARDOUS MATERIALS WARNING DESCRIPTION - Continued

WARNING

DO NOT handle brake shoes, brake drums or other brake components unless area has been properly cleaned. There may be hazardous dust on these components, which can be dangerous if you touch it or breathe it. Wear an approved filter mask and gloves to prevent dust from getting into eyes and on skin. NEVER use compressed air or a dry brush to clean brake components. Dust may be removed using an industrial-type vacuum cleaner. Clean dust or mud away from brake components with water and a wet, soft brush or cloth. Ensure dust is handled, stored, and disposed of in accordance with local regulations. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

WARNING

- Particles blown by compressed air are hazardous. DO NOT exceed 15 psi (103 kPa) nozzle pressure when drying parts with compressed air. Use a maximum of 30 psi (207 kPa) when cleaning components. DO NOT direct compressed air against human skin. To prevent death or injury, user must wear eye protection or face shield. Ensure air stream is directed away from user and other personnel in the area. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Wear welding mask, gloves, and protective apron when welding or using cutting torch. Ensure eye protection is the proper tint for the welding task being performed. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Never weld, grind, or use a cutting torch on Chemical Agent Resistant Coating (CARC) or Water Dispersible (WD) CARC-painted material without using air-line or air purifying respirators. Welding, grinding, or cutting painted surfaces releases toxic gases, vapors, and metal fumes that may cause skin or respiratory irritation. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

WARNING SUMMARY - Continued

GENERAL HAZARDOUS MATERIALS WARNING DESCRIPTION - Continued

WARNING

Chemical Agent Resistant Coating (CARC) topcoat paint contains isocyanates (ICN), which can trigger an allergic reaction in some people (lasting a few days to a few months) producing asthmatic-like symptoms such as coughing, wheezing, tightness in the chest, shortness of breath, including reddening of the skin and eyes, and itching. If you are or become sensitized to CARC paint, never use or apply CARC paint even if the above symptoms are minor. When not using CARC paint, ensure paint container is sealed. Store, handle and dispose of unused and spent CARC paint in accordance with local procedures and plans. Observe the following precautions to ensure the safety of personnel when CARC paint is applied:

- For spray/brush/roller painting in confined spaces, an air-line respirator is required, unless an air sampling shows exposure to be below standards. If air sampling is below standards, either chemical cartridge or air-line respirators are required.
- Spot painters applying CARC paint by brush or roller must wear clothing and gloves affording full coverage. Personnel using touch-up spray kits should wear an air-line respirator and protective clothing.
- DO NOT use alcohol or amine-based solvents to thin or remove CARC paints. Use of solvents with CARC paints can produce chemical reactions resulting in nausea, disease, burns or severe death or injury to personnel.
- DO NOT use paint solvents to remove paint/coating from skin.
- Mix paint/coating in a well-ventilated mixing room or spraying area away from open flames. Personnel mixing paint/coating should wear eye protection.
- Use paint/coating with adequate ventilation.
- Personnel grinding or sanding on painted equipment should use high efficiency air-purifying respirators.

Failure to comply may cause damage to environment and health of personnel. Seek medical attention in event of injury.

WARNING SUMMARY - Continued

GENERAL HAZARDOUS MATERIALS WARNING DESCRIPTION - Continued

WARNING

- Sealing compounds and adhesives are toxic and flammable. Always use in well-ventilated areas, away from heat, sparks, and flames. DO NOT breathe fumes. When not using sealing compounds and adhesives, ensure container is closed. Continued exposure can cause dizziness and irritate your eyes and throat. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Sealing compounds and adhesives bond immediately on contact with eyes, skin, or clothing. DO NOT allow compounds to contact skin or eyes. Use eye protection or face shield and protective gloves. If sealing compound or adhesive contacts eyes, try to keep eyes open and flush with water for 15 minutes. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

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HEADQUARTERS, DEPARTMENT OF THE
ARMY WASHINGTON, D.C., 07 DECEMBER 2015

TECHNICAL MANUAL

OPERATOR AND FIELD MAINTENANCE MANUAL
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

FOR

CHASSIS, CONTAINERIZED KITCHEN TRAILER:
7 1/2-TON, 4-WHEEL
XCK2000
NSN 2330-01-471-7006

TRAILER: 7 1/2-TON, 4-WHEEL
XCK2000E1
NSN 2330-01-506-5979

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

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HOW TO USE THIS MANUAL

SCOPE

This manual provides you with the information you will need to operate and maintain the XCK2000 and XCK2000E1 trailers.

MANUAL CONTENT

The front matter in this manual consists of Warning Summary, Title Block page, and Table of Contents.

The information contained in this manual is presented in 10 chapters. Each chapter is divided into Work Packages (WPs) that provide operating procedures, maintenance procedures, troubleshooting procedures, and other information for specific systems or components. Each WP starts on a right-hand page. Page numbers consist of the WP number followed by a dash and a second number. For example, "0008-9" means WP 0008, page 9.

The end of this manual contains an alphabetical index, DA Form 2028, and metric conversion chart.

FRONT MATTER

The "Warning Summary" starts on the first right-hand page immediately after the cover and should be read before performing any maintenance on the XCK2000 and XCK2000E1 trailers.

The Title Block page includes the reporting errors and recommending improvements statement.

The Table of Contents lists the chapters, figures, tables, and WPs in this manual.

CHAPTERS

Chapter 1 provides General Information, Equipment Description, and Theory of Operation.

Chapter 2 provides Description and Use of Controls and Indicators, and Operation Under Usual and Unusual Conditions.

Chapter 3 provides Operator Troubleshooting Procedures.

Chapter 4 provides Field Troubleshooting Procedures.

Chapter 5 provides Operator Preventive Maintenance Checks and Services (PMCS) Maintenance Instructions.

Chapter 6 provides Field Preventive Maintenance Checks and Services (PMCS) Maintenance Instructions.

Chapter 7 provides Operator Maintenance Instructions.

Chapter 8 provides Field Maintenance Instructions.

Chapter 9 provides Parts Information Repair Parts and Special Tools List (RPSTL).

Chapter 10 provides Supporting Information, including the titles of documents and publications referenced in this manual (References), Maintenance Allocation Chart (MAC) Introduction, MAC, Components of End Items (COEI) and Basic Issue Items (BII) lists, Additional Authorization List (AAL), Expendable and Durable Items List (EDIL), and Tool Identification List (TIL).

HOW TO USE THIS MANUAL - Continued

ALPHABETICAL INDEX

An index is located after the last WP in this manual and provides an alphabetical listing of WPs contained in this manual.

DA FORM 2028

DA Form 2028 is used to report errors and to recommend improvements for the tasks in this manual.

METRIC CONVERSION CHART

The metric conversion chart converts U.S. Standard measurements to Metric equivalents. Measurements in this manual are provided in both U.S. Standard and Metric units.

WARNINGS, CAUTIONS, AND NOTES

You must read and understand this manual ***BEFORE*** operating the XCK2000 and XCK2000E1 trailers.

Throughout this manual you will see WARNING, CAUTION, and NOTE headings. There are good reasons for every one of the following headings:

WARNING: A warning is used to alert the user to hazardous operating and maintenance procedures, practices, or conditions that could result in death or injury. Warnings must be strictly observed.

CAUTION: A caution is used to alert the user to hazardous operating and maintenance procedures, practices, or conditions that could result in damage to or destruction of equipment or mission effectiveness. Cautions must be strictly observed.

NOTE: A note highlights an essential operating or maintenance procedure, condition, or statement.

Warnings and cautions appear immediately preceding the step or task to which they pertain. It is important to read and thoroughly understand the warnings and/or cautions before beginning maintenance. Notes may precede or follow the steps to which they pertain, depending on which makes more sense.

INITIAL SETUP

Before starting a task, you must obtain all the tools, supplies, and personnel listed in the initial setup. Ensure you read the task before performing the maintenance. If any other tasks are referenced, you must go to the initial setup page for each of those tasks to find out what tools, supplies, and personnel will be needed.

REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

The RPSTL Introduction (WP 0076) explains how to use the RPSTL. Repair parts are listed and illustrated in the Parts Information (Chapter 9). There are no special tools; test, measurement, and diagnostic equipment; or support equipment.

HOW TO USE THIS MANUAL - Continued

INDEXING

Three indexing procedures are used in this manual to help you locate information quickly:

- Table of Contents
- Work package indexes
- Alphabetical index at the back of this manual

CHAPTER 1

GENERAL INFORMATION, EQUIPMENT DESCRIPTION, AND THEORY OF OPERATION

WORK PACKAGE INDEX

Title	WP Sequence No.
GENERAL INFORMATION	WP 0001
EQUIPMENT DESCRIPTION AND DATA	WP 0002
THEORY OF OPERATION	WP 0003

FIELD MAINTENANCE
GENERAL INFORMATION

SCOPE

Type of Manual

TM 9-2330-328-13&P is an Operator and Field Maintenance Manual Including Repair Parts and Special Tools List (RPSTL).

Equipment Name and Model Number

CKT XCK2000 Chassis, Containerized Kitchen Trailer, 7 1/2 Ton, 4-Wheel, NSN 2330-01-471-7006 and XCK200E1 Chassis, Containerized Kitchen Trailer, 7 1/2 Ton, 4-Wheel, NSN 2330-01-506-5979.

Purpose of Equipment

Used to transport containerized mobile kitchens on improved and unimproved roads. The XCK2000 and XCK2000E1 trailers are also used to transport the Standard Automotive Tool Set (SATS).

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army (DA) forms and procedures used for equipment maintenance will be those prescribed by (as applicable) DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual; or AR 700-138, Army Logistics Readiness and Sustainability.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your trailer needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design or performance.

All non-Aviation/Missile EIRs and PQDRs must be submitted through the Product Data Reporting and Evaluation Program (PDREP) Web site. The PDREP site is: https://www.pdrep.csd.disa.mil/.

If you do not have Internet access, you may submit your information using an SF 368 (Product Quality Deficiency Report). You can send your SF 368 using email, regular mail, or fax using the addresses/fax numbers specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual. We will send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion prevention and control of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items. The term "corrosion" means the deterioration of a material or its properties due to a reaction of that material with its chemical environment. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking. Plastics, composites, and rubbers can also degrade (also considered to be corrosion based on the above definition of corrosion). Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically ultraviolet) processes. The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking. The U.S. Army has defined the following nine (9) forms of corrosion used to evaluate the deterioration of metals. These shall be used when evaluating and documenting corrosion.

UNIFORM (or general attack): Affects a large area of exposed metal surface, like rust on steel or tarnish on silver. It gradually reduces the thickness of the metal until it fails.

CREVICE: Occurs in crevices created by rubber seals, gaskets, bolt heads, lap joints, dirt or other surface deposits. It will develop anywhere moisture or other corrosive agents are trapped and unable to drain or evaporate.

CORROSION PREVENTION AND CONTROL (CPC) - Continued

SELECTIVE LEACHING: One element, usually the anodic element of an alloy, corrodes away, leaving the cathodic element. This can create holes in metal.

INTERGRANULAR: Metal deterioration caused by corrosion on the bonds between or across the grain boundaries of the metal. The metal will appear to be peeling off in sheets, flaking, or being pushed apart by layers. A particular type of intergranular corrosion is exfoliation.

PITTING: This can result from conditions similar to those for crevice corrosion. Pits can develop on various materials due to their composition. Rifle boxes are big victims of pitting.

EROSION: Results when a moving fluid (liquid or gas) flows across a metal surface, particularly when solid particles are present in the fluid. Corrosion actually occurs on the surface of the metal, but the moving fluid washes away the corrosion and exposes a new metal surface, which also corrodes.

FRETTING: Occurs as a result of small, repetitive movements (e.g., vibration) between two surfaces in contact with each other. It is usually identified by a black powder corrosion product or pits on the surface.

GALVANIC: Occurs when two different types of metal come in contact with each other, like steel bolts on aluminum, for example. This is a common problem on aircraft because of their mix of metals.

STRESS: Term used to describe corrosion cracking and corrosion fatigue.

Where an item is not ready/available due to one of these forms of corrosion, it shall be recorded as a corrosion failure in the inspection record and the appropriate code (170) for corrosion shall be used when requesting/ performing maintenance.

Refer to TB 43-0213 for further information about corrosion.

SF 368, Product Quality Deficiency Report (PQDR) should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Procedures for destruction of Army Materiel to prevent enemy use can be found in TM 750-244-3.

PREPARATION FOR STORAGE OR SHIPMENT

Refer to WP 0071 for storage and shipment information.

LIST OF ABBREVIATIONS/ACRONYMS

NOTE

Refer to ASME Y14.38-2007, Abbreviations and Acronyms for Use on Drawings and Related Documents, for standard abbreviations.

Abbreviation/Acronym	Name
°C	Degrees Celsius
°F	Degrees Fahrenheit
±	Plus or Minus
AAL	Additional Authorization List
AR	Army Regulation
ASME	American Society of Mechanical Engineers
BD	Bundle
BE	Bale
BII	Basic Issue Item
BOI	Basis of Issue

LIST OF ABBREVIATIONS/ACRONYMS - Continued

Abbreviation/Acronym	Name
BT	Bottle
BX	Box
CAC	Common Access Card
CAGEC	Commercial and Government Entity Code
CARC	Chemical Agent Resistant Coating
cm	Centimeter
CN	Can
COEI	Components of End Item
CPAC	Corrosion Prevention and Control
CPC	Corrosion Prevention and Control
CTA	Common Tables of Allowance
DA	Department of the Army
DD	Department of Defense
DR	Drum
EA	Each
EDIL	Expendable and Durable Items List
e.g.	Exempli Gratia, For Example
EIC	End Item Code
EIR	Equipment Improvement Recommendation
EMP	Electromagnetic Pulse
FGC	Functional Group Code
FIG	Figure
FM	Field Manual
FMM	Field Maintenance Modules
FMTV	Family of Medium Tactical Vehicles
ft	Foot
FRS	Forward Repair System
GAA	Grease, Automotive and Artillery
GCW	Gross Combined Weight
GMTK	General Mechanic's Tool Kit
GL	Gallon
GR	Gross
HCI	Hardness Critical Item
HDI	Hexamethylene Diisocyanate
ICN	Isocyanate
in.	Inch
ISO	International Organization for Standardization
JSM	Joint Service Manual
JTA	Joint Table of Allowances
kg	Kilogram
kgF	Kilogram Force
kgM	Kilogram Meter
km	Kilometer
kPa	Kilopascal
kph	Kilometers per Hour
KT	Kit
lb	Pound
lbF	Pound Force
lb-ft	Pound-Foot
lb-in	Pound-Inch
L	Liter
LED	Light-Emitting Diode
MAC	Maintenance Allocation Chart

LIST OF ABBREVIATIONS/ACRONYMS - Continued

Abbreviation/Acronym	Name
mi	Mile
mm	Millimeter
mph	Miles per Hour
MTOE	Modified Table of Organization and Equipment
MWO	Modification Work Order
N•m	Newton Meter
NHA	Next Higher Assembly
NIIN	National Item Identification Number
NSN	National Stock Number
OD	Outer Diameter
PAM	Pamphlet
P/N	Part Number
PDREP	Product Data Reporting and Evaluation Program
PMCS	Preventive Maintenance Checks and Services
PQDR	Product Quality Deficiency Report
psi	Pounds per Square Inch
RO	Roll
RPSTL	Repair Parts and Special Tools List
SAE	Society of Automotive Engineers
SATS	Standard Automotive Tool Set
SB	Supply Bulletin
SC/SM	Supply Catalogs/Supply Manuals
SF	Standard Form
SMR	Source, Maintenance, and Recoverability
SRA	Specialized Repair Activity
TACOM	Tank Automotive and Armaments Command
TAMMS	The Army Maintenance Management System
TB	Technical Bulletin
TC	Technical Circular
TDA	Table of Distribution and Allowances
TIL	Tool Identification List
TM	Technical Manual
TMDE	Test, Measurement, and Diagnostic Equipment
TOE	Table of Organization and Equipment
TULSA	TACOM Unique Logistics Support Applications
U/I	Unit of Issue
U/M	Unit of Measure
UNF	Unified Fine
UOC	Usable On Code
UUT	Unit Under Test
WD	Water Dispersible
WP	Work Package

END OF WORK PACKAGE

FIELD MAINTENANCE
EQUIPMENT DESCRIPTION AND DATA

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

EQUIPMENT DESCRIPTION

Capabilities and Features

The XCK2000 and XCK2000E1 trailers have the following capabilities and features:

- Designed to transport a standard International Organization for Standardization (ISO) sized containerized kitchen and the Standard Automotive Tool Set (SATS).
- Can be towed by the 5 ton, Family of Medium Tactical Vehicles (FMTV) or similar vehicles on highway at 55 mph (89 kph), on gravel at 30 mph (48 kph), or cross-country at 15 mph (24 kph).
- Can ford hard-bottom water crossings to any depth which can be negotiated by the prime mover.
- Has a load capacity of 15,000 lb (6804 kg).

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

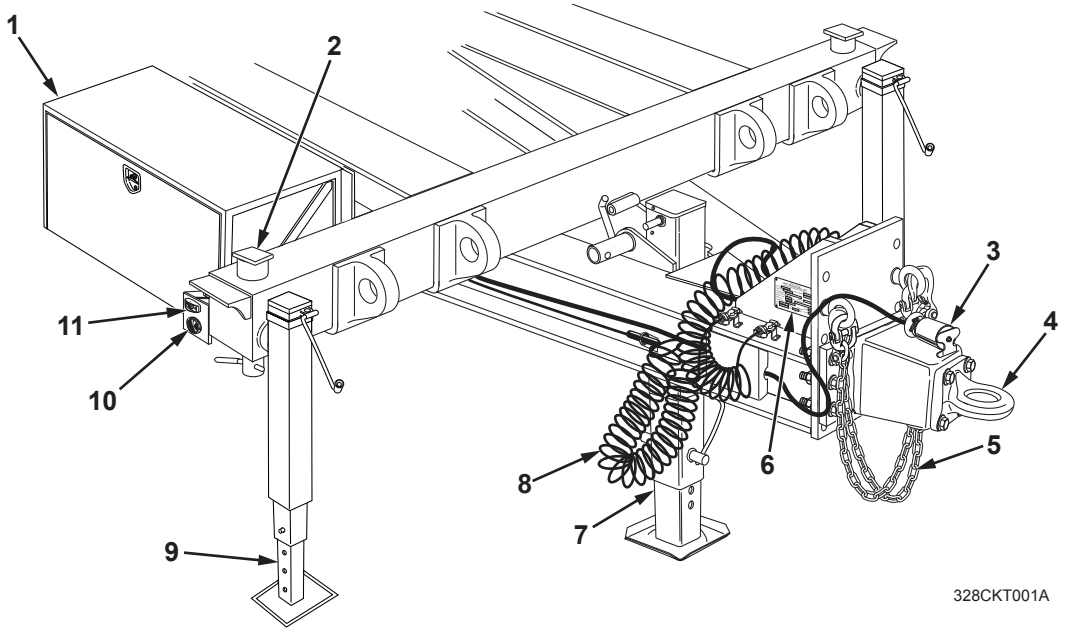

Figure 1. Front View.

Table 1. Left Front Components and Descriptions.

KEY	COMPONENT	DESCRIPTION
1	Tool Box	Used to store Components of End Item (COEI) and Basic Issue Items (BII).
2	Twistlocks	Used to secure the ISO sized containerized kitchen or SATS. There are two twistlocks in the front of the trailer.
3	Intervehicular Cable	Provides connection between the prime mover and the trailer electrical system.
4	Lunette	Used to connect the trailer to the prime mover.
5	Safety Chains	Connect to the prime mover shackles to prevent the trailer from fully breaking away.
6	Data Plates	Provides information about the trailer: model, manufacturer, part number, National Stock Number (NSN), load rating and transporting data. There are two data plates located on each side of the lunette.
7	Landing Leg	Supports the trailer during connection and disconnection from prime mover, and during maintenance tasks.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

Table 1. Left Front Components and Descriptions - Continued.

KEY	COMPONENT	DESCRIPTION
8	Service and Emergency Air Lines and Gladhands	Connects the air supply of the prime mover to the trailer.
9	Leveling Jacks	Stabilizes and levels the trailer on uneven ground. There are two leveling jacks for the front of the trailer.
10	Reflectors	There are two amber-colored reflectors on the front sides of the trailer.
11	Clearance Lights	There are two amber-colored clearance lights on the front sides of the trailer. The XCK2000 has incandescent clearance lights. The XCK2000E1 trailer has Light Emitting Diode (LED) clearance lights.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

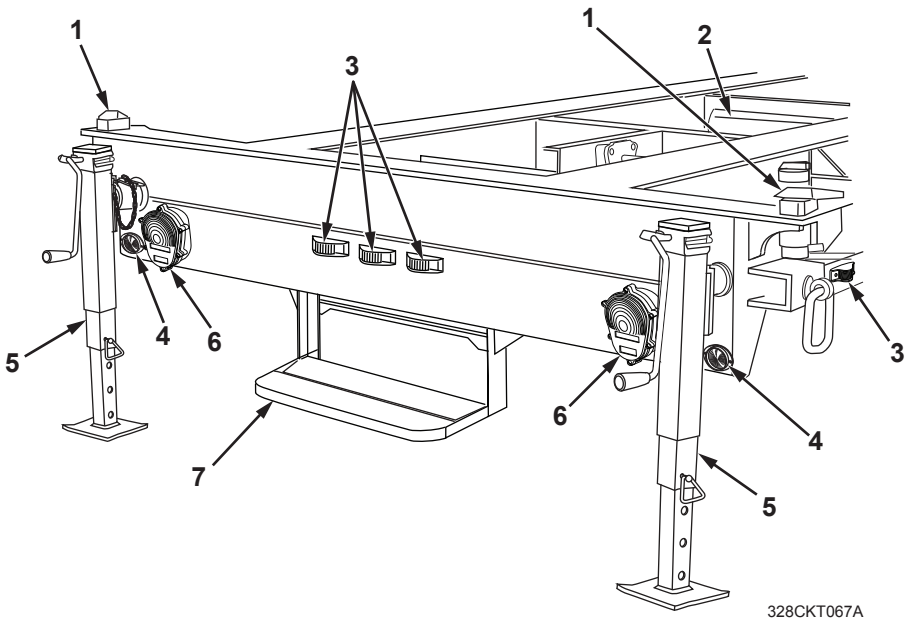

Figure 2. Rear View (XCK2000).

Table 2. Rear Components and Descriptions (XCK2000).

KEY	COMPONENT	DESCRIPTION
1	Twistlocks	Used to secure the ISO sized containerized kitchen or SATS. There are two twistlocks in the rear of the trailer.
2	Air Reservoir Tanks	Stores the brake system air pressure. There are two air reservoir tanks.
3	Clearance Lights	There are five red clearance lights on the rear of the trailer. The XCK2000 trailer has incandescent clearance lights.
4	Reflectors	There are four red reflectors on the rear of trailer.
5	Leveling Jacks	Stabilizes and levels the trailer on uneven ground. There are two leveling jacks for the rear of the trailer.
6	Rear Composite Lights	The two rear composite lights provide stopping and turning signals, blackout light, and safe operation in darkness. The XCK2000 trailer has incandescent rear composite lights.
7	Bumper Step	Provides easier access to the ISO sized containerized kitchen or SATS being transported on the trailer.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

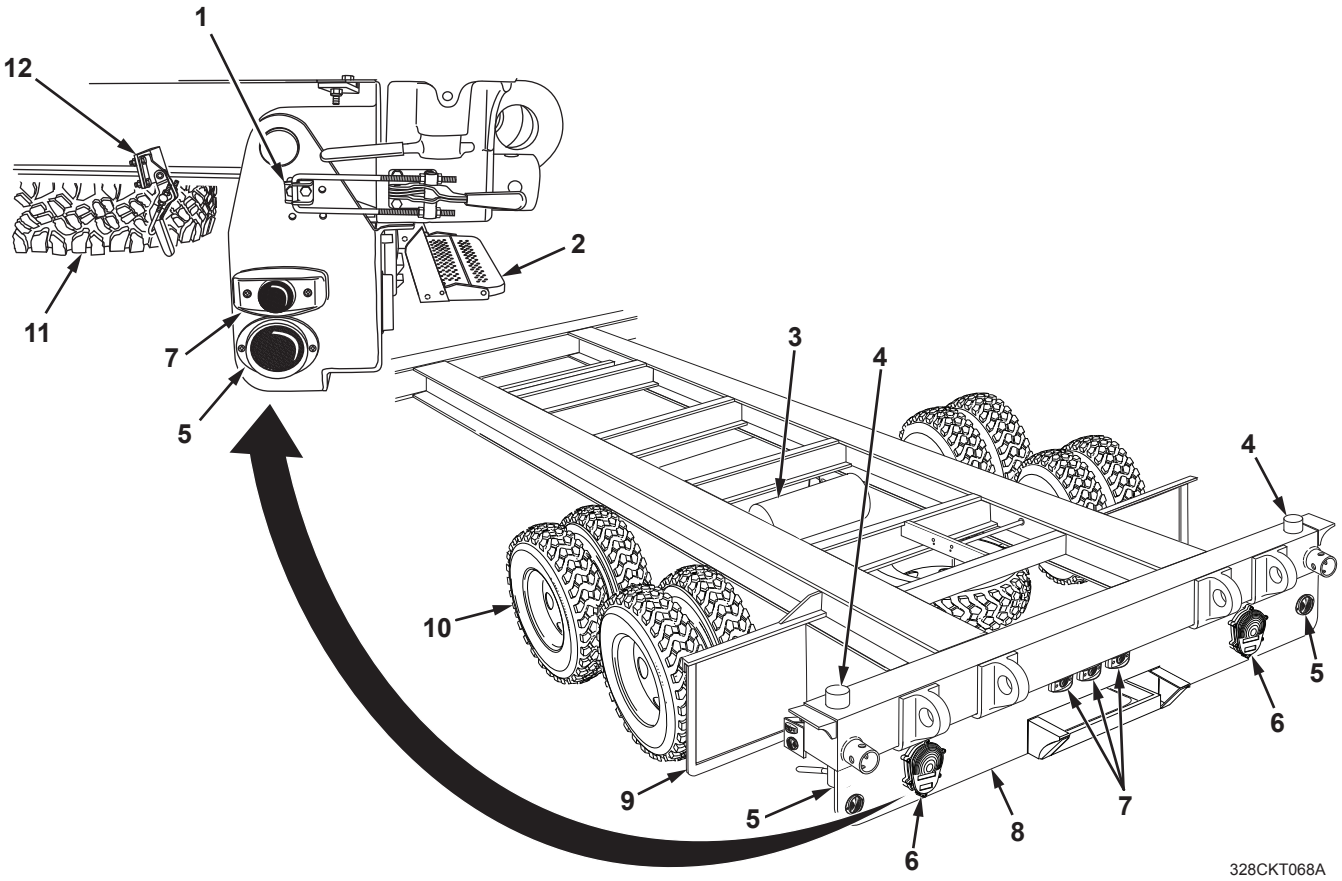

Figure 3. Rear View (XCK2000E1).

Table 3. Components and Descriptions (XCK2000E1).

KEY	COMPONENT	DESCRIPTION
1	Outer Bumper Latch	The XCK2000E1 trailer has two outer bumper latches which secure the bumper in the down position.
2	Bumper Step	Provides easier access to the ISO sized containerized kitchen or SATS being transported on the trailer.
3	Air Reservoir Tanks	Stores the brake system air pressure. There are two air reservoir tanks.
4	Twistlocks	Used to secure the ISO sized containerized kitchen or SATS. There are two twistlocks on the rear of the trailer.
5	Reflectors	There are four red reflectors on the rear of trailer.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

Table 3. Components and Descriptions (XCK2000E1) - Continued.

KEY	COMPONENT	DESCRIPTION
6	Rear Light Emitting Diode (LED) Lights.	The XCK2000E1 has two rear LED lights. The rear LEDs provide stopping and turning signals, blackout light, and safe operation in darkness.
7	Clearance Lights (LED)	There are five red LED clearance lights on the rear of the XCK2000E1 trailer.
8	Bumper	The XCK2000E1 trailer has a bumper that folds up to provide clearance when loading the trailer for transportation.
9	Mud Flaps	Keep mud and water from being splashed off to the rear. Also keep rocks from being thrown off to the rear when traveling on unimproved roads.
10	Tires, Wheels, Axles	Consists of dual-axle, dual-mounted wheels, axles, brake system.
11	Spare Tire	A spare tire is secured under the trailer.
12	Inner Bumper Latch	The XCK2000E1 trailer has two inner bumper latches which secure the bumper in the folded position.

XCK2000 and XCK2000E1 EQUIPMENT DATA

Table 4. XCK2000 and XCK200E1 Trailer Data.

EQUIPMENT	MEASUREMENT/TYPE
Weights and Dimensions	
Length (to center of lunette)	296 in. (752 cm)
Width (overall)	96 in. (244 cm)
Height (top of tires)	32 in. (81 cm)
Weight (empty)	Estimated 6,000 lb (2722 kg)
Payload (cross country)	15,000 lb (6804 kg)
Payload (highway)	15,000 lb (6804 kg)
Gross Combined Weight (GCW)	21,000 lb (9525 kg)
Weight on Pintle	2,100 lb (953 kg)
Angle of Departure	20-degree slope

XCK2000 and XCK2000E1 EQUIPMENT DATA - Continued

Table 4. XCK2000 and XCK200E1 Trailer Data - Continued.

EQUIPMENT	MEASUREMENT/TYPE
Mission Profile Maximum Speeds	
Highway	55 mph (89 kph)
Cross-Country	15 mph (24 kph)
Gravel	30 mph (48 kph)
Wheels	
Diameter of Stud Circle	6.5 in. (16.5 cm) Bolt circle
Number of studs	Eight per wheel
Rim Size	16 in. x 6 in. (40 cm x 15 cm)
Tire Retention	Standard
Wheel Type	Offset disk
Bearing type	Tapered roller
Number of Wheels	Eight on the trailer, plus one spare wheel and tire
Tires	
Number of Tires	Eight on the trailer, plus one spare wheel and tire
Number of Plies	Eight
Size	LT 235/85/R16
Inflation	75 psi (517 kPa)
Type	On/Off road pneumatic radial
Axles	
Type	D1200-Tubular
Outer Diameter (OD)	5 in. (13 cm)
Number	Two

XCK2000 and XCK2000E1 EQUIPMENT DATA - Continued

Table 4. XCK2000 and XCK200E1 Trailer Data - Continued.

EQUIPMENT	MEASUREMENT/TYPE
Brakes	
Type	Air
Operating Pressure	95 psi (655 kPa)
Diameter	12 in. (30 cm)
Width	5 in. (13 cm)
Type Mechanism	Two-shoe, self-centering, expanding S-camshaft actuation.
Electrical System, 24-Volt	
Rear Composite Lights	24 Volt, 3 candle power, incandescent lamps on the XCK2000, LEDs on the XCK2000E1.
Clearance Lights	24 Volt, 32 candle power, incandescent lamps on the XCK2000, LEDs lamps on the XCK2000E1.
Frame	
Material	Welded structural steel beam
Height	38 in. (97 cm)
Parking Brakes	
Actuation	24/30 Air-actuated internal spring
Location	Forward gladhands
Leveling Jacks	
Length Extended	46.9 in. (119 cm)
Length Retracted	21.4 in. (54 cm)
Landing Leg	
Length Extended	50.3 in. (128 cm)
Length Retracted	24.3 in. (62 cm)
Type	Drop Leg, Dual Pin, Spring Loaded.

XCK2000 and XCK2000E1 EQUIPMENT DATA - Continued

Table 4. XCK2000 and XCK200E1 Trailer Data - Continued.

EQUIPMENT	MEASUREMENT/TYPE
Springs	
Material	Steel alloy
Number of leaves	Three
Type	Low arch
Component Weight Data	
Axle	225 lb (102 kg)
Spring	175 lb (79 kg)
Brake Drum	90 lb (41 kg)
Wheel and Tire	200 lb (91 kg)
Landing Leg	95 lb (43 kg)
Lunette	75 lb (34 kg)
Tool Box	75 lb (34 kg)
Bumper	90 lb (41 kg)

END OF WORK PACKAGE

FIELD MAINTENANCE
THEORY OF OPERATION

GENERAL

The XCK2000 and XCK2000E1 trailers are designed to transport the International Organization for Standardization (ISO) sized containerized kitchen or the Standard Automotive Tool Set (SATS).

ELECTRICAL SYSTEM

Connects to prime mover electrical system to activate the 24 volt system which operates the taillights and clearance lights. The XCK2000 is equipped with incandescent lights. The XCK2000E1 trailer is equipped with Light-Emitting Diode (LED) lights.

BRAKE SYSTEM

The trailer has an air brake system for service and emergency operation. The brake system includes air reservoir tanks, drain valves, gladhands, relay valve, trailer valve, air brake chambers, lines, fittings, and hoses. The trailer is equipped with an emergency braking breakaway system in the event the trailer separates from the prime mover.

SERVICE BRAKE SYSTEM

When air pressure is released from the air chambers, the spring inside the air chambers pushes the slack adjusters. The slack adjusters turn the camshafts causing the brake shoes to expand against the brake drum.

SUSPENSION SYSTEM

Consists of a dual-axle with dual-mounted wheels and multi-leaf spring suspension which absorbs road shock.

END OF WORK PACKAGE

CHAPTER 2

OPERATOR INSTRUCTIONS

WORK PACKAGE INDEX

Title	WP Sequence No.
DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS	WP 0004
OPERATION UNDER USUAL CONDITIONS	WP 0005
OPERATION UNDER UNUSUAL CONDITIONS	WP 0006

OPERATOR MAINTENANCE
DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS

GENERAL

The following tables and illustrations provide the description and use of the XCK2000 and XCK2000E1 trailer controls and indicators.

Table 1. Landing Leg.

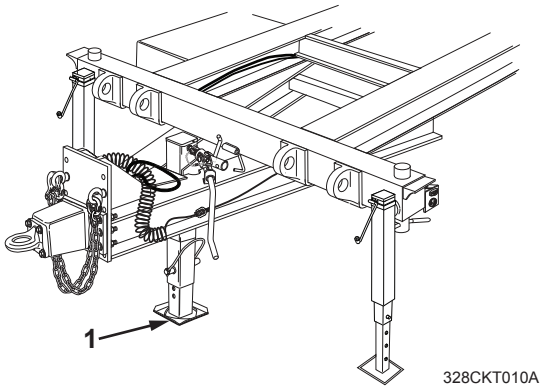

Figure 1. Landing Leg.

Key	Control/Indicator	Function
1	Landing Leg	Supports the trailer when it is disconnected from the prime mover and during maintenance tasks and during airlift operations.

Table 2. Leveling Jacks.

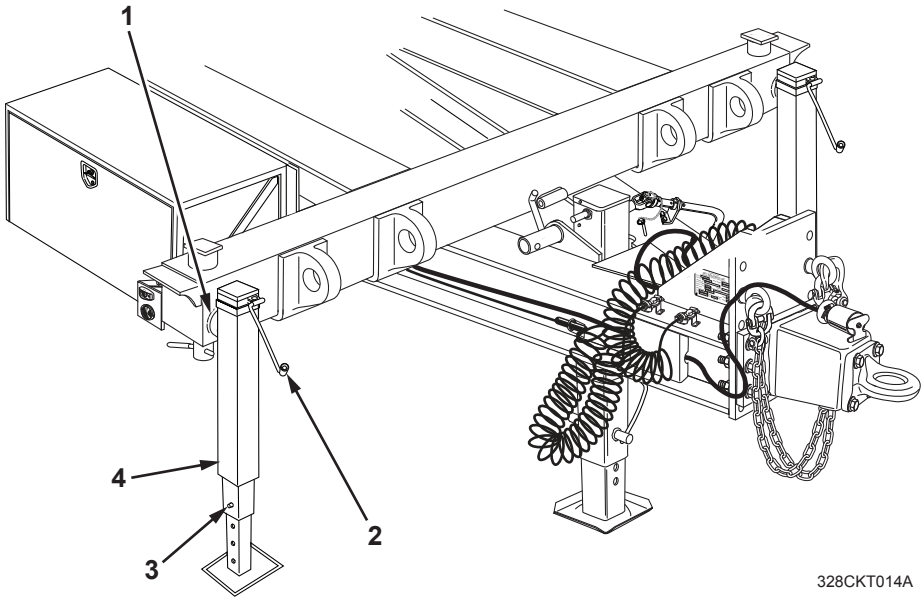

Figure 2. Leveling Jacks.

Key	Control/Indicator	Function
1	Locking Pin	Secures the leveling jack to the trailer in the down position, or in the folded up or stowed position.
2	Crank Handle	Operates the gearbox. Turning crank clockwise retracts leveling jack assembly, lowering trailer. Turning crank counterclockwise extends leveling jack assembly, raising trailer.
3	Retaining Pin	Locks the leveling jack leg in a variety of optional positions.
4	Leveling Jacks	Four leveling jacks, two in front and two in back of the trailer, help support and keep the trailer level. The leveling jacks are stored in the tool box.

Table 3. Lunette and Safety Chains.

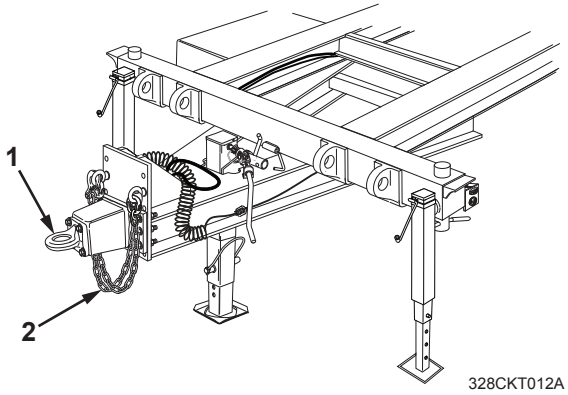

Figure 3. Lunette and Safety Chains.

Key	Control/Indicator	Function
1	Lunette	Used to connect the trailer to the prime mover. The lunette can be raised or lowered to connect to a variety of prime movers.
2	Safety Chains	Hooked to shackles on the prime mover to prevent trailer from fully breaking away.

Table 4. Intervehicular Cable and Gladhands.

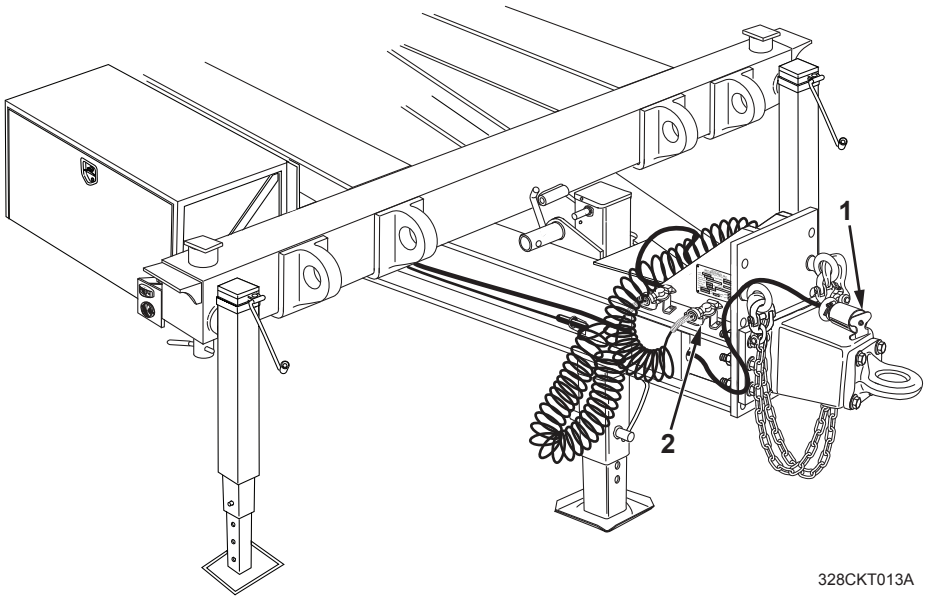

Figure 4. Intervehicular Cable and Gladhands.

Key	Control/Indicator	Function
1	Intervehicular Cable	Provides connection between the prime mover electrical system and the trailer electrical system.
2	Gladhands	Provide emergency (red) air hose and service (blue) air hose connections between the trailer and the prime mover.

Table 5. Drain Valves.

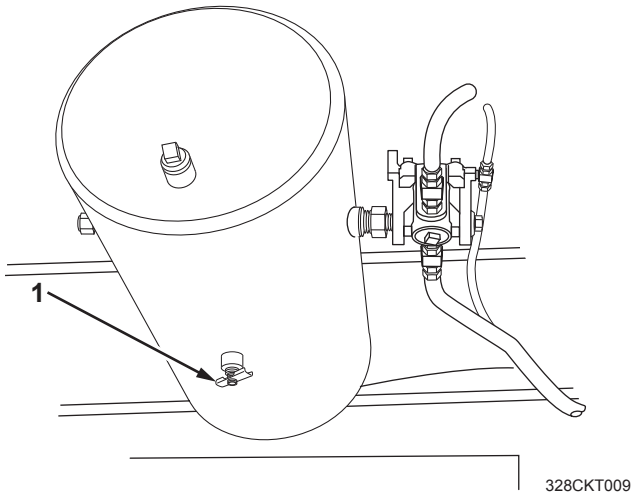

Figure 5. Drain Valves.

Key	Control/Indicator	Function
1	Drain Valves	Used to drain accumulated moisture and release air pressure from the two air reservoir tanks.

Table 6. Spring Brake Chambers and Slack Adjusters.

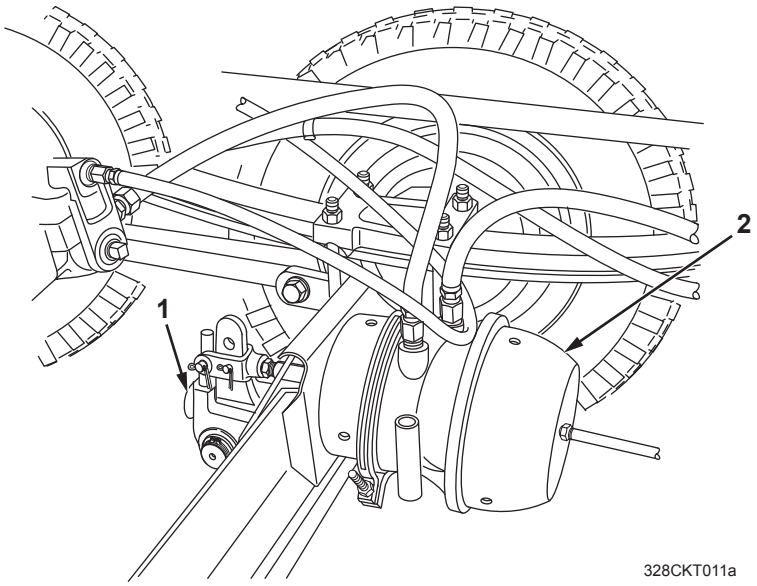

Figure 6. Spring Brake Chambers and Slack Adjusters.

Key	Control/Indicator	Function
1	Slack Adjusters	One slack adjuster is splined to the camshaft at each of the four brake assemblies. The movement of the slack adjusters causes the camshaft to turn, thus applying brakes.
2	Spring Brake Chambers	Spring brake chambers are located on the axle at each of the four wheel assemblies.

Table 7. Spare Tire Mount.

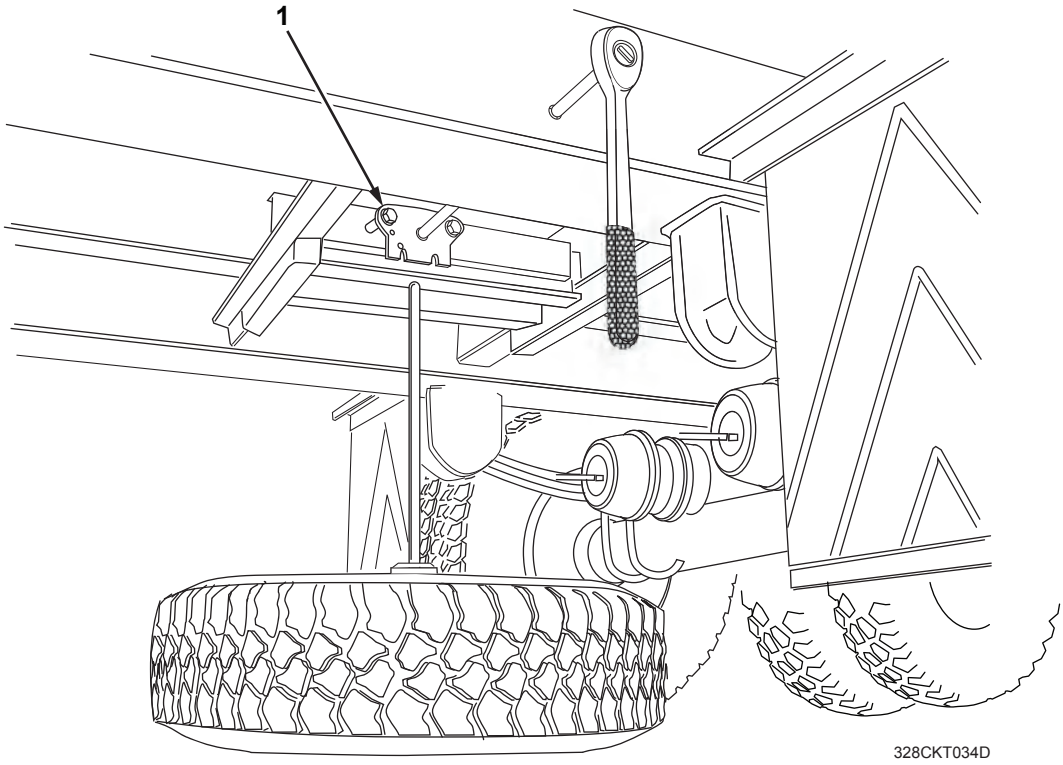

Figure 7. Spare Tire Mount.

Key	Control/Indicator	Function
1	Spare Tire Mount	Provides a secure location to store spare tire under the trailer. Spare tire is shown lowered in Figure 7 for clarity.

Table 8. Twistlock.

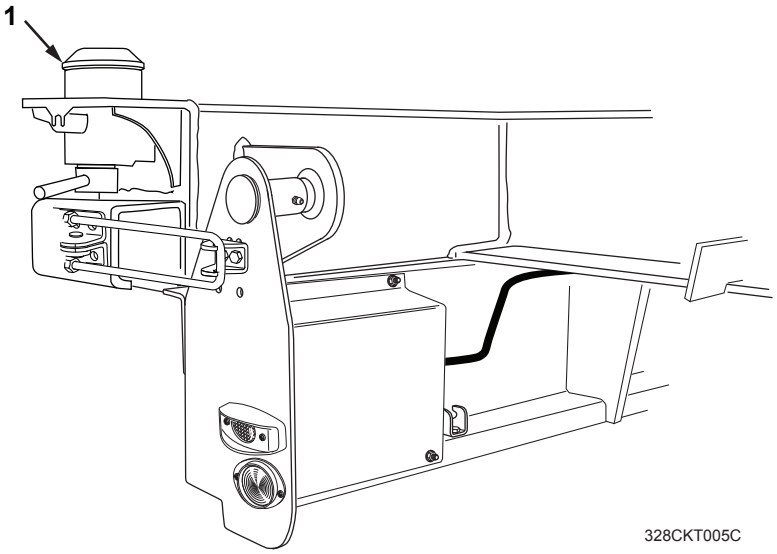

Figure 8. Twistlock.

Key	Control/Indicator	Function
1	Twistlock	Secures the containerized kitchen or the Standard Automotive Tool Set (SATS) to the trailer. There are two twistlocks in the front and two twistlocks in the rear of the trailer.

Table 9. Lights and Reflectors.

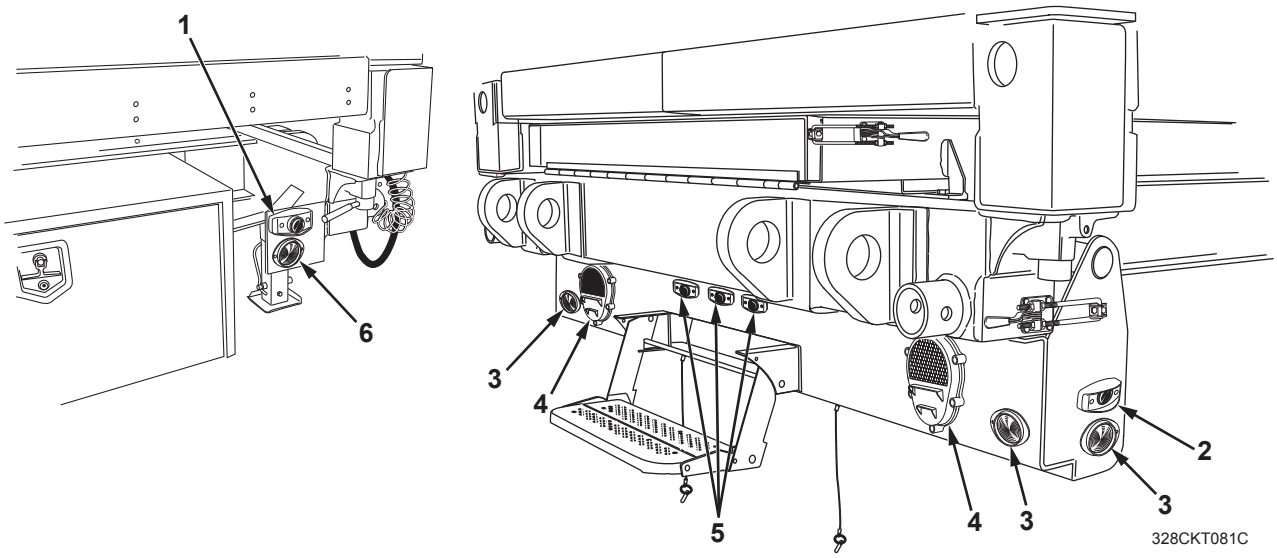

Figure 9. Lights and Reflectors (XCK2000E1 shown).

Key	Control/Indicator	Function
1	Amber Clearance Light	One located on each front side of the trailer. The XCK2000 trailer is equipped with incandescent lights. The XCK2000E1 trailer is equipped with Light-Emitting Diodes (LED).
2	Red Clearance Light	One located on each rear side of the bumper. The XCK2000 trailer is equipped with incandescent lights. The XCK200E1 trailer is equipped with LEDs.
3	Red Reflector	One located on each rear side of the bumper. Two located on rear of the bumper.
4	Rear Composite Lights	Two located on rear of the bumper. The XCK2000 trailer is equipped with incandescent lights. The XCK2000E1 trailer is equipped with LEDs.
5	Red Clearance Light	Three located on rear of the bumper. The XCK2000 trailer is equipped with incandescent lights. The XCK2000E1 trailer is equipped with LEDs.
6	Amber Reflector	One located on each front side of the trailer.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATION UNDER USUAL CONDITIONS

INITIAL SETUP:

Personnel Required
(2)

References
Prime Mover Technical Manual

References (cont.)
WP 0030
WP 0033

PREPARATION FOR USE

1. Perform all BEFORE Preventive Maintenance Checks and Services (PMCS) (WP 0030) before operating trailer.
2. Review all prime mover operating instructions before coupling or uncoupling trailer.

END OF TASK

USE OF CHOCK BLOCKS

WARNING

Chock wheels to prevent trailer movement. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

1. If trailer is parked on level surface and neither side of trailer needs to be raised, place one chock block (Figure 1, Item 1) in front of one wheel, and place another chock block (Figure 1, Item 1) in back of other wheel.

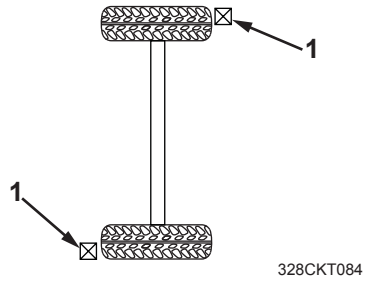

Figure 1. Chock Block Placement on Level Surface With Neither Side of Trailer Raised.

USE OF CHOCK BLOCKS - Continued

2. If trailer is parked on level surface and one side of trailer needs to be raised, place chock blocks (Figure 2, Item 1) in front and back of wheel remaining on ground.

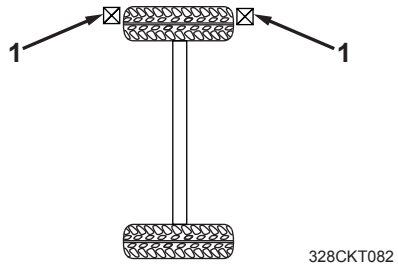

Figure 2. Chock Block Placement on Level Surface With One Side of Trailer Raised.

3. If trailer is parked on an incline with front of trailer facing uphill, place chock blocks (Figure 3, Item 1) in back of both wheels.

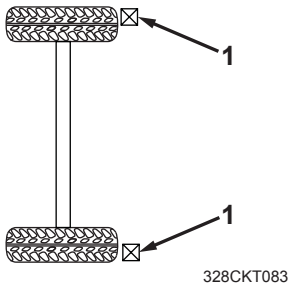

Figure 3. Chock Block Placement on Incline With Front of Trailer Facing Uphill.

4. If trailer is parked on an incline with front of trailer facing downhill, place chock blocks (Figure 4, Item 1) in front of both wheels.

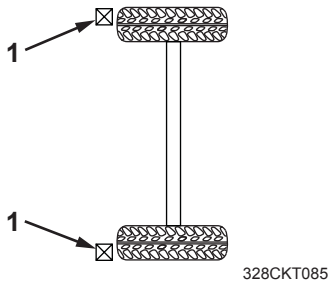

Figure 4. Chock Block Placement on Incline With Front of Trailer Facing Downhill.

END OF TASK

ALIGNING SEMITRAILER WITH PRIME MOVER

WARNING

- All personnel not involved in the coupling/uncoupling operation must stand clear of prime mover and trailer to prevent serious injury to personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in event of injury.
- To prevent injury or death to personnel or damage to equipment, coupling should be done by two people, the first person in the prime mover cab and the second acting as ground guide. Operator must know where ground guide is at all times. Never stand between prime mover and trailer while prime mover is backed up to or driven away from trailer. Failure to comply may result in death or injury to personnel. Seek medical attention in event of injury.
- Trailer should ALWAYS have wheels chocked, with or without a load, during coupling or uncoupling to prime mover and when parked. Failure to comply may result in death or injury to personnel. Seek medical attention in event of injury.

1. Review and perform prime mover operating procedures to prepare prime mover for coupling.
2. Align prime mover with trailer.
3. Slowly back prime mover until lunette (Figure 5, Item 2) and pintle (Figure 5, Item 3) engage. Close pintle (Figure 1, Item 3).
4. Install pintle lockpin (Figure 5, Item 1).

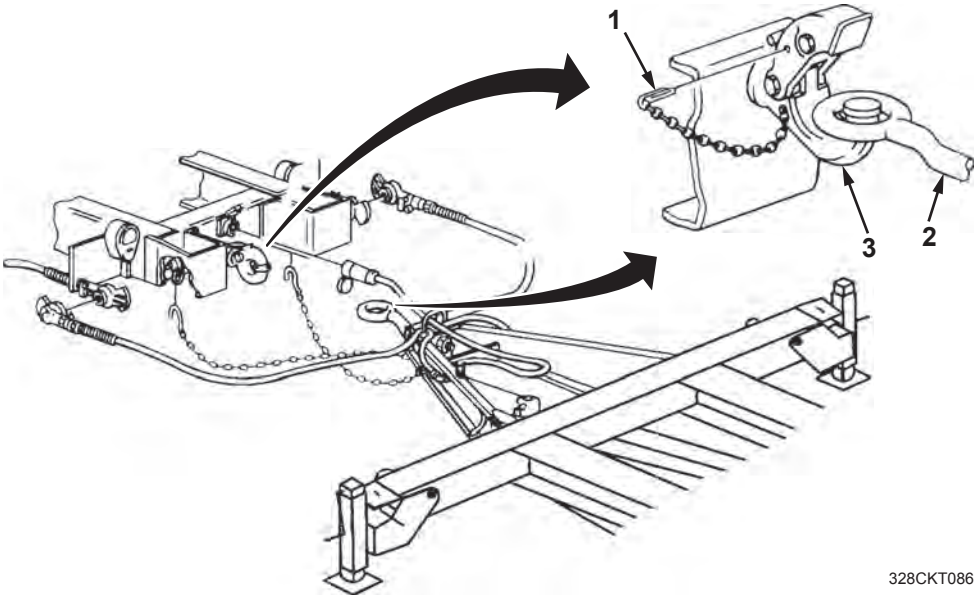

Figure 5. Prime Mover and Trailer Alignment.

END OF TASK

RAISING LANDING LEG

WARNING

Ensure prime mover is in place and trailer is secured to prime mover before raising landing leg. If prime mover is not in place and trailer secured, trailer could fall when landing leg is raised. Failure to comply may result in death or injury to personnel. Seek medical attention in event of injury.

1. Install crank handle (Figure 6, Item 2) on landing leg (Figure 6, Item 1).
2. Rotate crank handle (Figure 6, Item 2) counterclockwise until trailer is resting on prime mover.
3. Loosen retention screws (Figure 6, Item 3) on handle support bracket (Figure 6, Item 4).

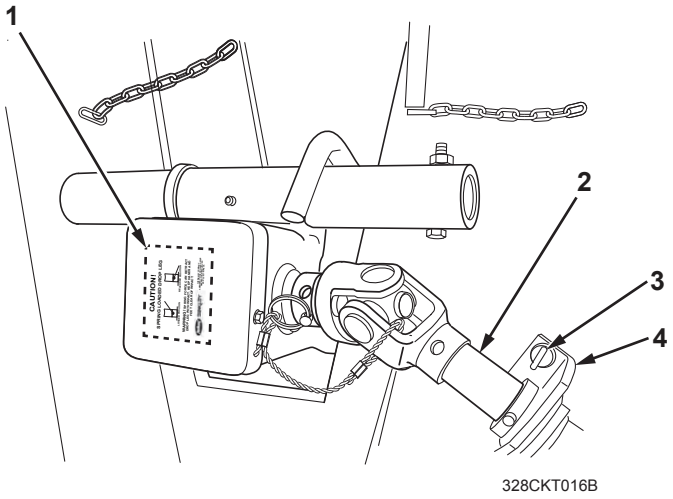

Figure 6. Landing Leg Crank Handle.

RAISING LANDING LEG - Continued

4. Remove pin (Figure 7, Item 4) from handle U-joint (Figure 7, Item 2) and crankshaft (Figure 7, Item 1) and remove crank handle (Figure 7, Item 3).

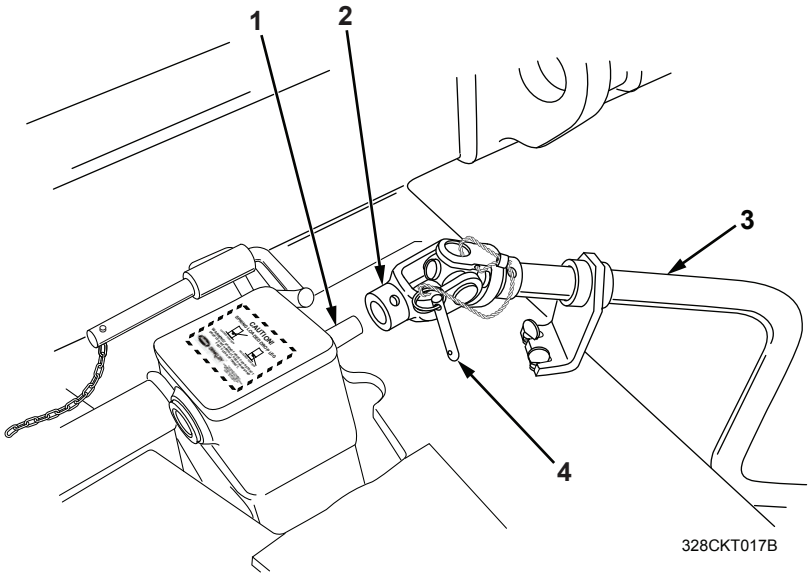

Figure 7. Landing Leg Crank Handle Removal.

5. Secure crank handle (Figure 8, Item 1) in tool box (Figure 8, Item 2) with two wing nuts (Figure 8, Item 3).

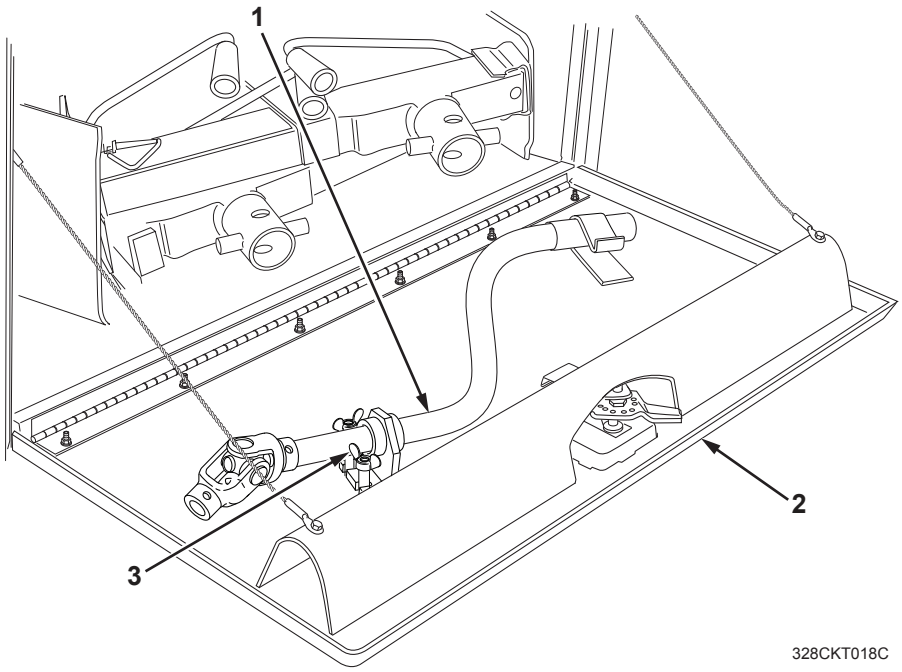

Figure 8. Landing Leg Crank Handle Storage.

RAISING LANDING LEG - Continued

WARNING

Landing leg is spring loaded. When raising landing leg keep downward pressure on it to prevent landing leg from swinging up quickly. Failure to comply may result in personnel death or injury, and/or equipment damage. Seek medical attention in event of injury.

6. Apply downward pressure on landing leg shoe (Figure 9, Item 3).
7. Push adjustment handle (Figure 9, Item 2) down to released position.
8. Slowly release pressure on landing leg shoe (Figure 9, Item 3), allowing landing leg (Figure 9, Item 4) to slowly rise until it stops.
9. Push adjustment handle (Figure 9, Item 2) up into locked position.
10. Remove lower safety pin (Figure 9, Item 5) and lower landing leg retention pin (Figure 9, Item 1).

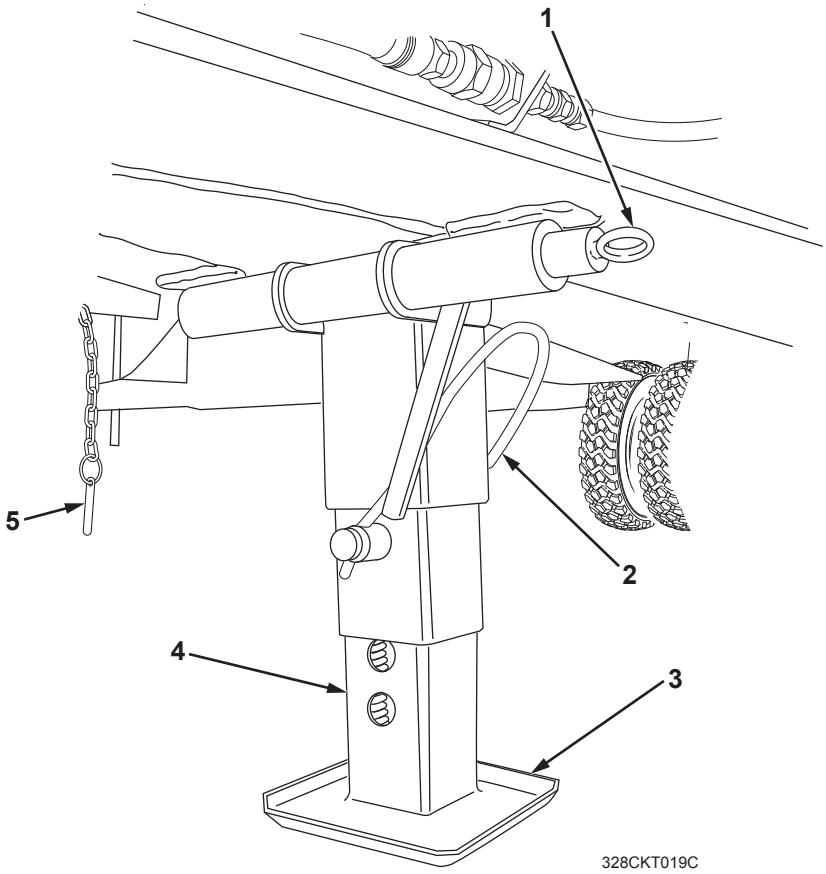

Figure 9. Landing Leg Released.

RAISING LANDING LEG - Continued

11. Remove safety pin (Figure 10, Item 1) and upper landing leg retention pin (Figure 10, Item 2).

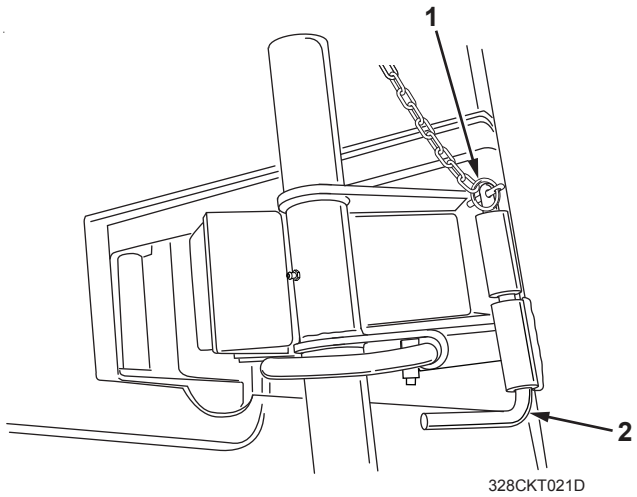

Figure 10. Landing Leg Safety Pin and Upper Retention Pin Removal.

12. Using lifting handle (Figure 11, Item 1), place landing leg (Figure 11, Item 2) in raised position.

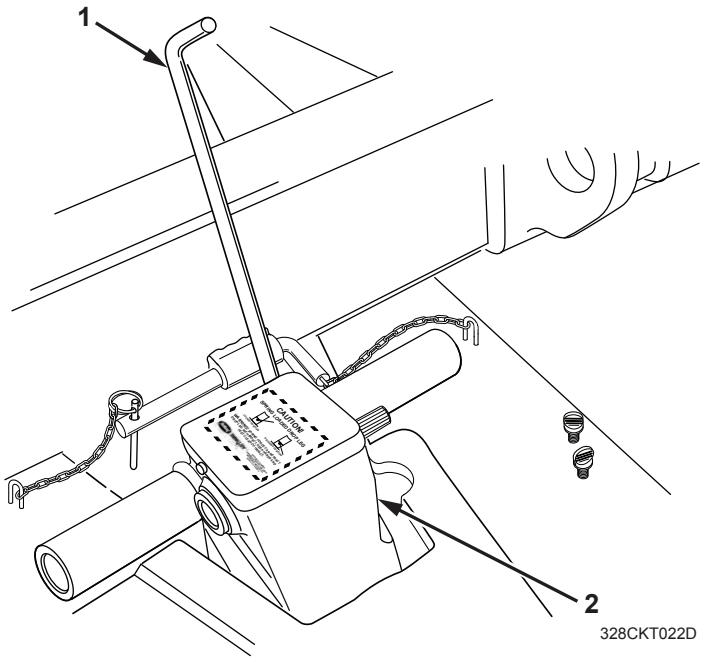

Figure 11. Landing Leg Lifting Handle Raising Landing Leg.

RAISING LANDING LEG - Continued

13. Install upper landing leg retention pin (Figure 12, Item 2) and safety pin (Figure 12, Item 1) to secure landing leg in raised position.
14. Slide lifting handle (Figure 12, Item 3) into stored position.

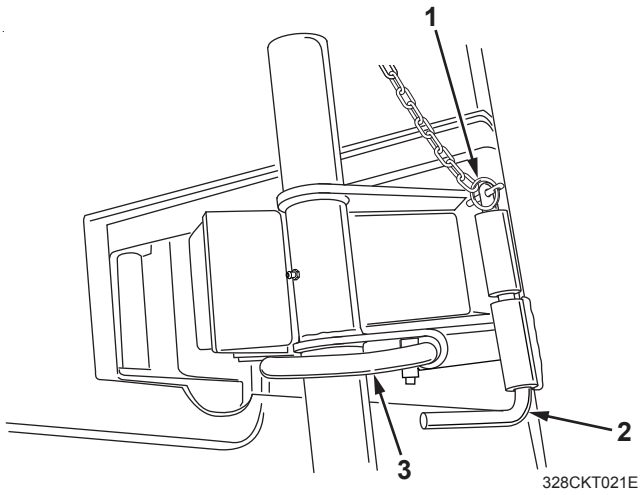

Figure 12. Landing Leg Secured in Raised Position.

15. Install lower landing leg retention pin (Figure 13, Item 1) and safety pin (Figure 13, Item 2).

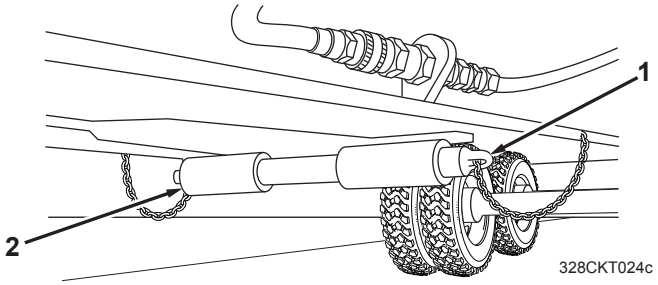

Figure 13. Lower Landing Leg Retention Pin and Safety Pin Installed.

END OF TASK

CONNECT INTERVEHICULAR CABLE, GLADHANDS, AND SAFETY CHAINS

WARNING

- Ensure trailer is securely connected to prime mover before connecting intervehicular cable, gladhands, and safety chains. Trailer may shift or fall if not secured to prime mover. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Service air can be identified by blue markings on gladhand and air hose; emergency air can be identified by red markings on gladhand, and air hose. DO NOT cross service or emergency air lines at gladhands. Ensure they are hooked up correctly to meet brake air pressure requirements and proper brake operation. Failure to comply may result in personnel injury or equipment damage. Seek medical attention in event of injury.

1. Attach two safety chains (Figure 14, Item 4) from trailer to prime mover by crossing chain under lunette to opposite side eyebolt.
2. Connect trailer intervehicular cable (Figure 14, Item 1) to prime mover.
3. Connect trailer service air hose (blue) gladhand (Figure 14, Item 3) and emergency air hose (red) gladhand (Figure 14, Item 5) to prime mover gladhands (Figure 14, Items 2 and 6).
4. Ensure air hose gladhands (Figure 14, Items 3 and 5) and intervehicular cable (Figure 14, Item 1) are securely connected to prime mover.
5. Turn on prime mover air supply to pressurize the brake system air reservoir tanks.

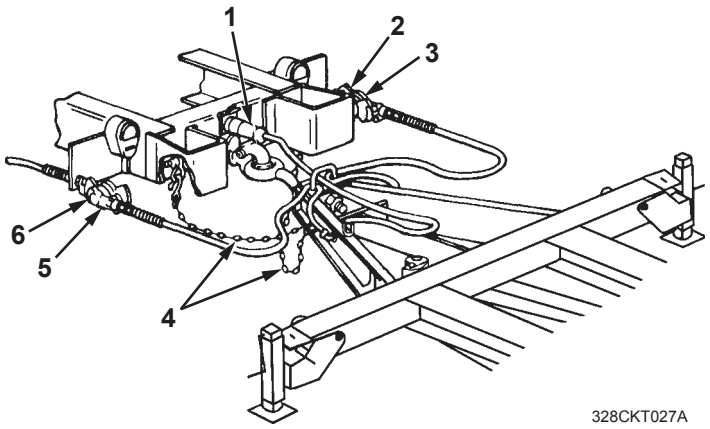

Figure 14. Intervehicular Cable, Gladhands, and Safety Chains Connected.

END OF TASK

OPERATE LIGHTS

1. Turn on service lights in prime mover and check that all taillights (Figure 15, Item 1) are working.
2. Have an assistant operate turn signals and apply service brakes. Check that turn signals flash and brake lights light.
3. Check taillight blackout lights for proper operation.

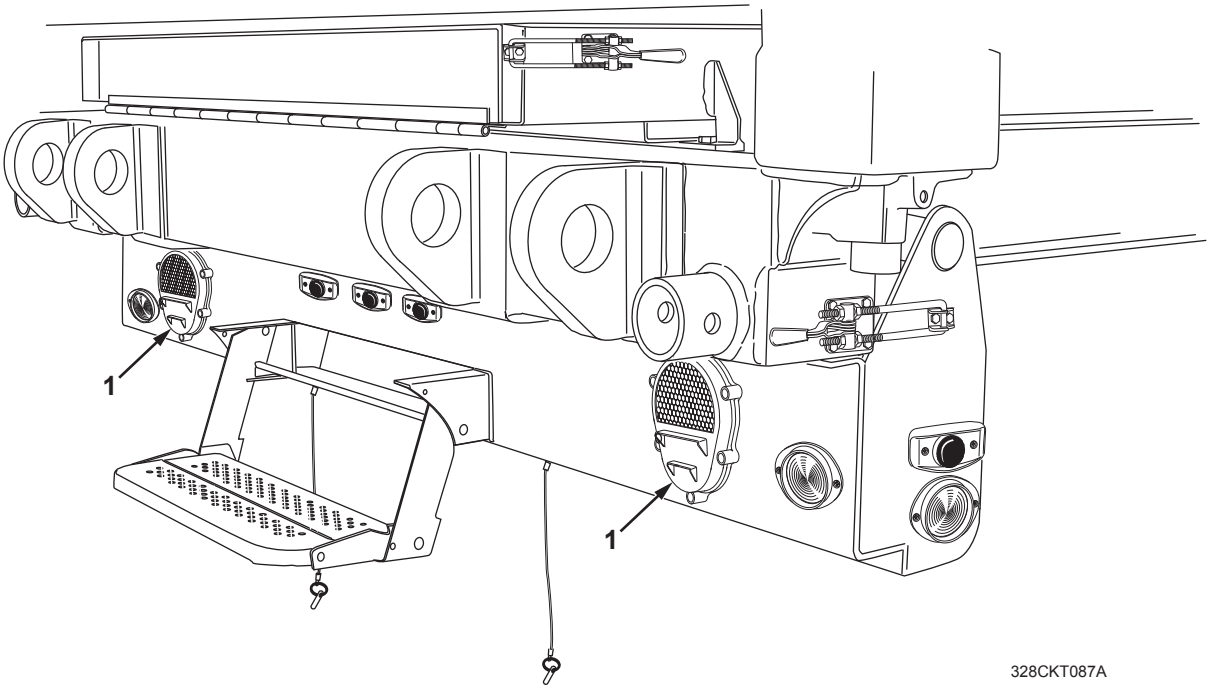

Figure 15. Light Operation.

END OF TASK

RAISING LEVELING JACKS

WARNING

DO NOT raise leveling jack assemblies unless trailer is connected to a prime mover or is securely supported. The trailer may drop, resulting in personnel death, injury, or equipment damage. Seek medical attention in event of injury.

CAUTION

Stop turning hand crank when it becomes difficult to turn. Continuing to turn hand crank may cause damage to leveling jack.

1. Raise leveling jack (Figure 16, Item 5) to highest level by turning crank handle (Figure 16, Item 6) counterclockwise.

RAISING LEVELING JACKS - Continued

2. Remove retaining pin (Figure 16, Item 3).
3. Raise telescoping leg (Figure 16, Item 4) of leveling jack (Figure 16, Item 5) to highest level.
4. Install retaining pin (Figure 16, Item 3).
5. Remove lockpin (Figure 16, Item 1) and remove leveling jack (Figure 16, Item 5) from trailer swivel mount (Figure 16, Item 2).
6. Secure leveling jack (Figure 16, Item 5) in tool box.
7. Repeat Steps 1 through 6 until all four jacks are secured.

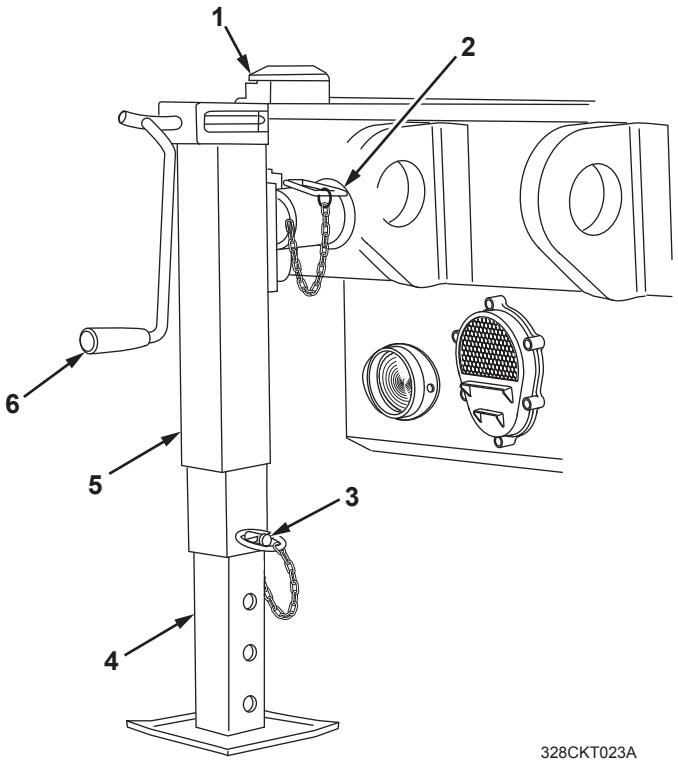

Figure 16. Leveling Jacks Raised.

END OF TASK

SERVICE BRAKES OPERATION

WARNING

- Ensure trailer is securely connected to prime mover before connecting intervehicular cable, gladhands, and safety chains. Trailer may shift or fall if not secured to prime mover. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Service air can be identified by blue markings on gladhand and air hose; emergency air can be identified by red markings on gladhand, and air hose. DO NOT cross service or emergency air lines at gladhands. Ensure they are hooked up correctly to meet brake air pressure requirements and proper brake operation. Failure to comply may result in personnel injury or equipment damage. Seek medical attention in event of injury.

1. Have an assistant apply and release prime mover service brakes.
2. Check trailer relay valve vents (Figure 17, Item 1) with each application and release of prime mover service brakes. Venting of air should be heard.
3. Check spring brake chambers to ensure they are not caged (WP 0035).

WARNING

Wear eye protection when opening air reservoir drain valve and avoid contact with the air stream. Failure to comply may result in personnel injury. Seek medical attention in event of injury.

4. Ensure air valve (Figure 17, Item 2) is closed.

SERVICE BRAKES OPERATION - Continued

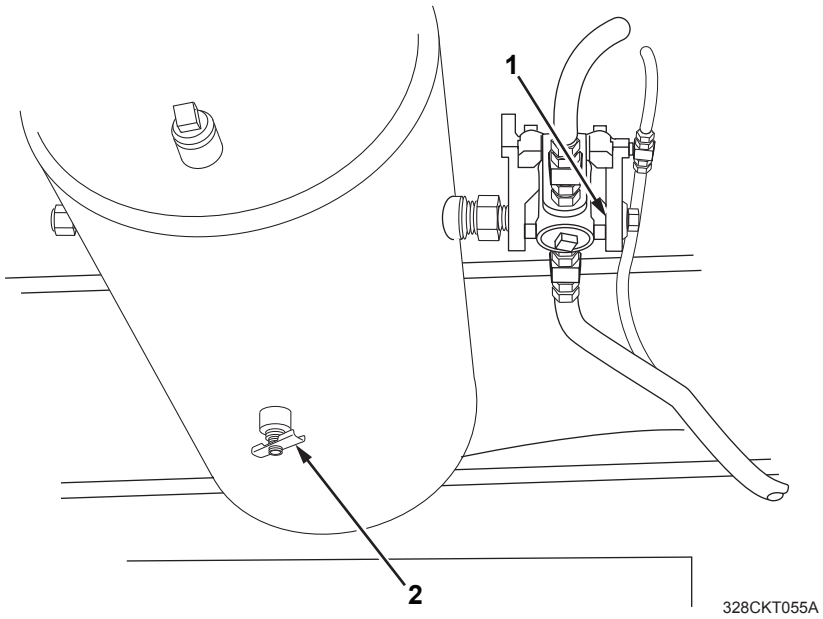

Figure 17. Service Brakes Operation.

END OF TASK

OPERATION

Driving

When driving the prime mover and trailer, the overall length of the unit must be kept in mind when passing other vehicles and when turning. Backing is also affected because the unit is hinged in the middle.

Turning

When turning corners, allow for the fact that trailer wheels turn inside the turning radius of prime mover. Make right turns by driving prime mover about halfway into intersection and then cutting sharply to the right. This will keep trailer wheels off curb. Keep vehicle close enough to edge of road to prevent vehicles following from passing on right.

Stopping

During normal operation, stepping on brake pedal will apply both prime mover and trailer brakes at the same time. Apply brakes gradually and smoothly.

Parking

When parking for extended periods, disconnect gladhands from prime mover. Both prime mover and trailer parking brakes should be set. The spring brake section of air chamber contains an emergency brake application spring. When the emergency air exhausts this section of air chamber, the spring releases therefore applying emergency brake.

Backing

Use assistant to guide you while backing. Adjust rearview mirrors before backing. When prime mover and trailer are in straight line, the rear of trailer will move opposite to direction the front prime mover wheels are turned. When prime mover wheels are turned to the right, the rear of the trailer will move to left as you back up. When prime mover wheels are turned to left, the rear of the trailer will move to right.

OPERATION - Continued

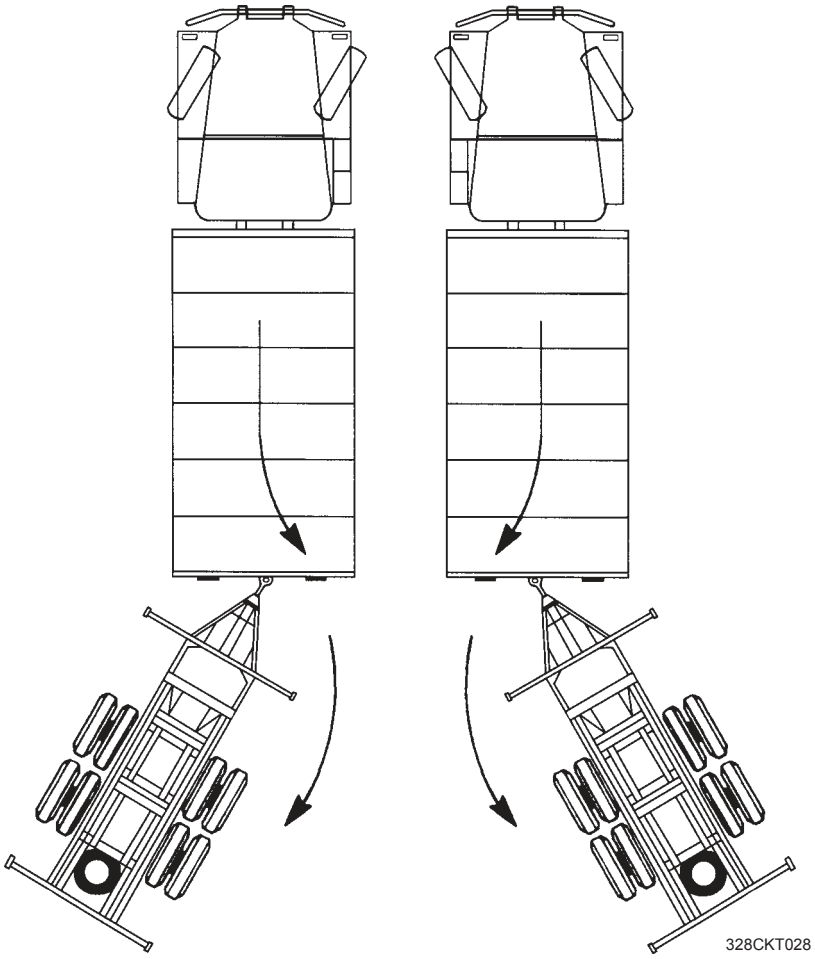

Figure 18. Backing.

END OF TASK

AFTER USE

Lowering Landing Leg

1. Remove upper safety pin (Figure 19, Item 1) and upper landing leg retention pin (Figure 19, Item 2) and lower landing leg (Figure 19, Item 4) using lifting handle (Figure 19, Item 3).

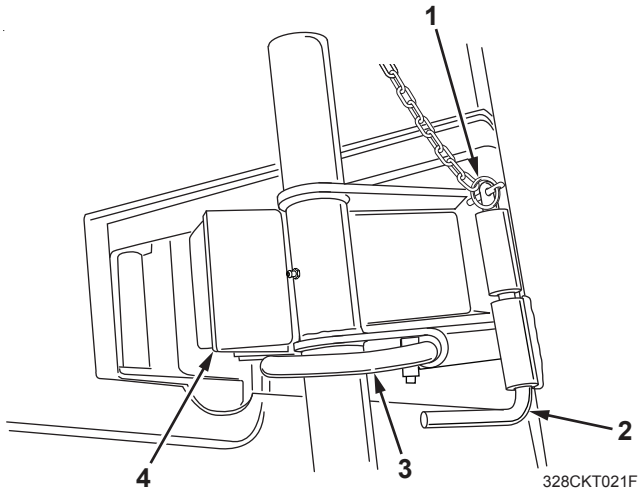

Figure 19. Upper Safety Pin and Upper Landing Leg Retention Pin Removal.

2. Remove lower safety pin (Figure 20, Item 2) and lower landing leg retention pin (Figure 20, Item 1).

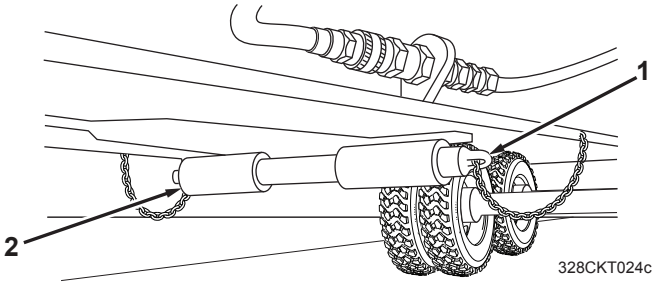

Figure 20. Lower Safety Pin and Lower Landing Leg Retention Pin Removal.

AFTER USE - Continued

3. Using lifting handle (Figure 21, Item 1) place landing leg (Figure 21, Item 2) in full down position.

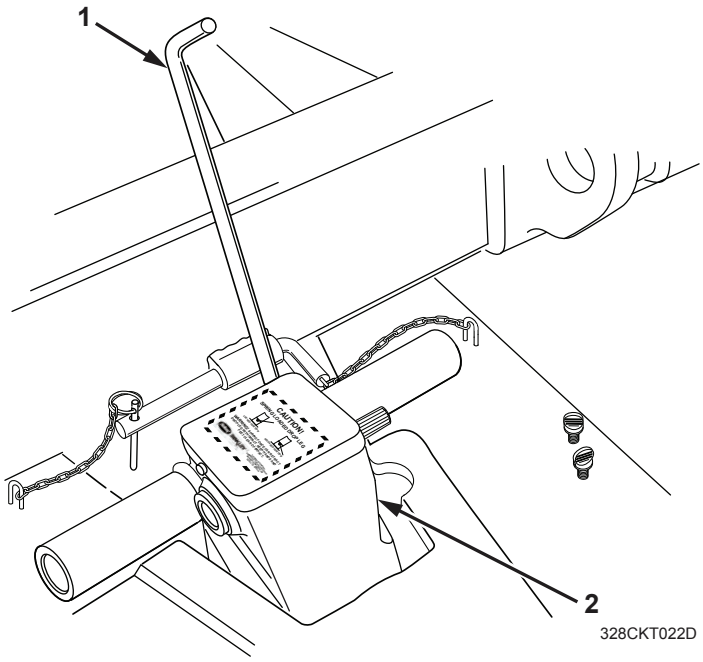

Figure 21. Landing Leg Lifting Handle Lowering Landing Leg.

AFTER USE - Continued

WARNING

Landing leg is spring loaded. When raising landing leg keep downward pressure on it to prevent landing leg from swinging up quickly. Failure to comply may result in personnel death or injury, and/or equipment damage. Seek medical attention in event of injury.

4. Install lower landing leg retention pin (Figure 22, Item 1) and install lower safety pin (Figure 22, Item 5) to secure landing leg (Figure 22, Item 4) in down position.
5. Push adjustment handle (Figure 22, Item 2) down to released position.
6. Apply downward pressure on landing leg shoe (Figure 22, Item 3) and push landing leg (Figure 22, Item 4) down to desired height.
7. Keeping downward pressure on landing leg shoe (Figure 22, Item 3), raise adjustment handle (Figure 22, Item 2) to locked position.

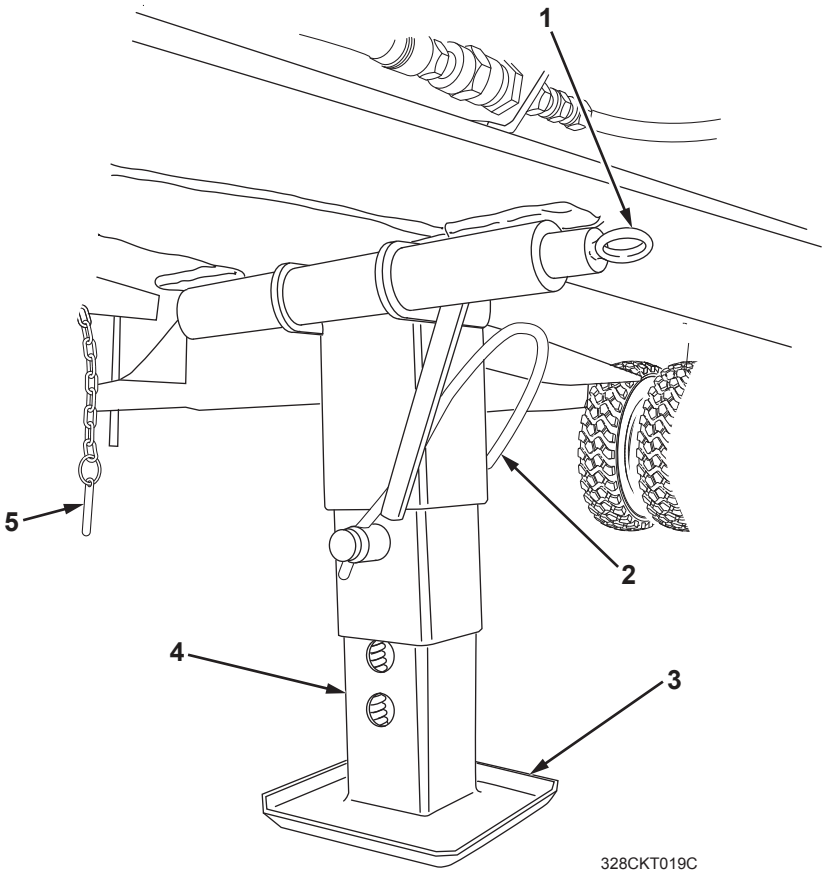

Figure 22. Landing Leg Lowered and Secured.

AFTER USE - Continued

8. Loosen two wing nuts (Figure 23, Item 3) inside toolbox lid (Figure 23, Item 2) and remove crank handle (Figure 23, Item 1).

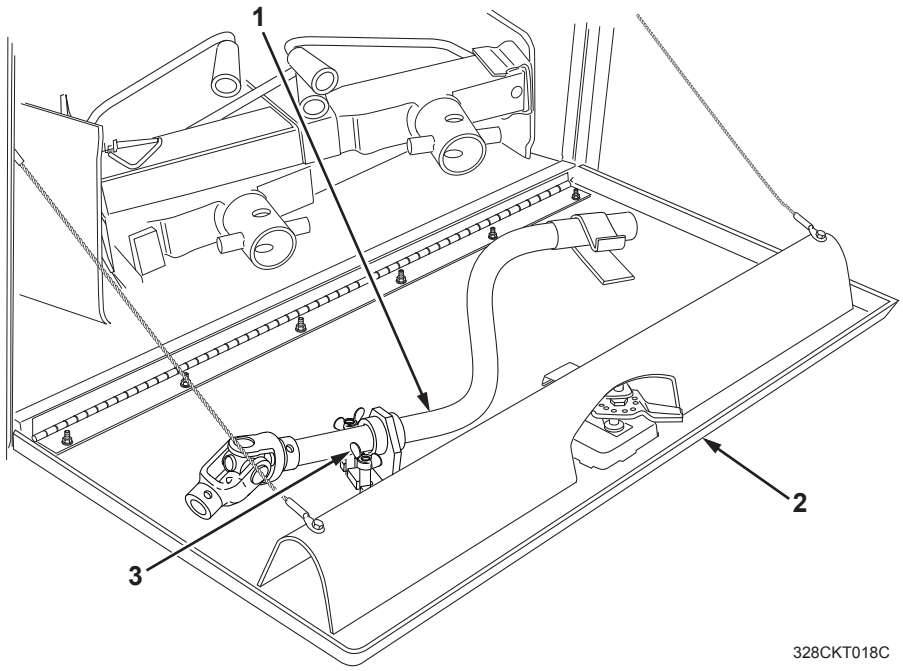

Figure 23. Landing Leg Crank Handle Removal From Tool Box.

AFTER USE - Continued

NOTE

Ensure slots in handle support bracket slide under retention screws on frame of trailer.

9. Install crank handle (Figure 24, Item 3) with slots of handle support bracket (Figure 24, Item 4) under trailer frame retention screws (Figure 24, Item 5) and open end of crank handle U-joint (Figure 24, Item 2) over landing leg crankshaft (Figure 24, Item 1).
10. Insert pin (Figure 24, Item 6) through crank handle U-joint (Figure 24, Item 2) and landing leg crankshaft (Figure 24, Item 1), securing them together.
11. Tighten retention screws (Figure 24, Item 5) on handle support bracket (Figure 24, Item 4) to secure crank handle (Figure 24, Item 3) to trailer frame.
12. Rotate crank handle (Figure 24, Item 3) clockwise to extend landing leg (Figure 24, Item 7) to desired height.

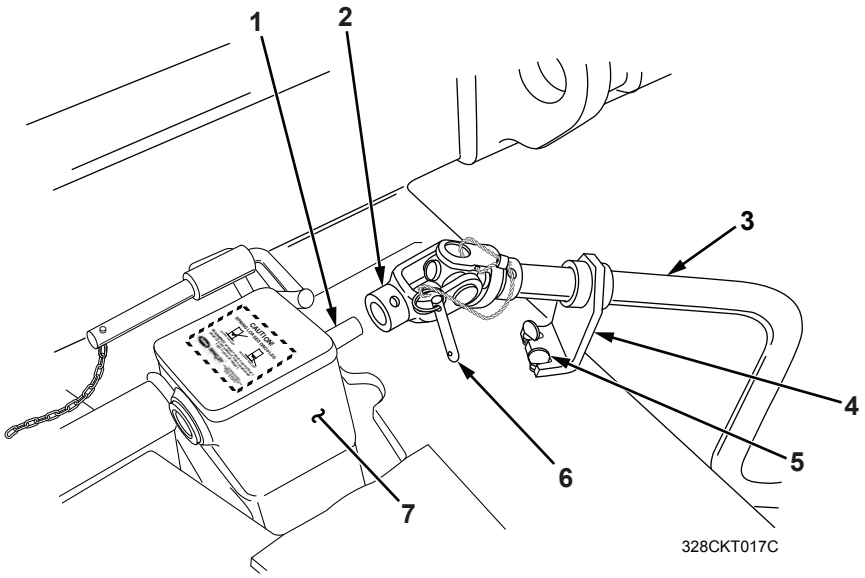

Figure 24. Landing Leg Crank Handle Installed.

END OF TASK

UNCOUPLING TRAILER FROM PRIME MOVER

WARNING

- All personnel not involved in the coupling/uncoupling operation must stand clear of prime mover and trailer to prevent serious injury to personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in event of injury.
- To prevent injury or death to personnel or damage to equipment, coupling should be done by two people, the first person in the prime mover cab and the second acting as ground guide. Operator must know where ground guide is at all times. Never stand between prime mover and trailer while prime mover is backed up to or driven away from trailer. Failure to comply may result in death or injury to personnel. Seek medical attention in event of injury.
- Trailer should ALWAYS have wheels chocked, with or without a load, during coupling or uncoupling to prime mover and when parked. Failure to comply may result in death or injury to personnel. Seek medical attention in event of injury.

1. Unhook safety chains (Figure 25, Item 4) from prime mover.
2. Close air supply valves on prime mover.
3. Disconnect service air hose (blue) gladhand (Figure 25, Item 2) and emergency air hose (red) gladhand (Figure 25, Item 6) from prime mover gladhands (Figure 25, Items 1 and 5).

NOTE

Trailer parking brakes are set when gladhands are disconnected from prime mover.

4. Disconnect intervehicular cable connector (Figure 25, Item 3).
5. Remove safety pin (Figure 25, Item 9) from pintle (Figure 25, Item 8).
6. Have assistant drive prime mover forward to uncouple lunette (Figure 25, Item 7) from pintle (Figure 25, Item 8).

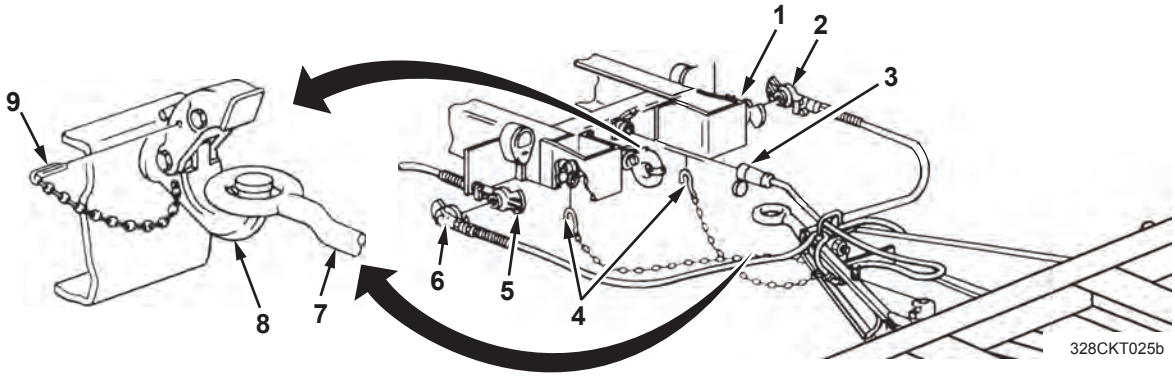

Figure 25. Uncoupling Trailer.

END OF TASK

INSTALLING AND LOWERING LEVELING JACKS

1. Install leveling jack (Figure 26, Item 5) on trailer swivel mounts (Figure 26, Item 2) located on each corner of the trailer.
2. Secure leveling jack (Figure 26, Item 5) with lockpin (Figure 26, Item 1).

WARNING

Watch hands and feet while dropping leveling jack telescoping leg as telescoping leg may drop suddenly. Failure to comply may result in personnel injury. Seek medical attention in event of injury.

3. Remove retaining pin (Figure 26, Item 3) and drop leveling jack telescoping leg (Figure 26, Item 4) to lowest possible position and secure with retaining pin (Figure 26, Item 3).
4. Repeat Steps 1 through 3 until all four leveling jacks are in place.
5. Rotate crank handle (Figure 26, Item 6) counterclockwise to extend leveling jacks (Figure 26, Item 5).

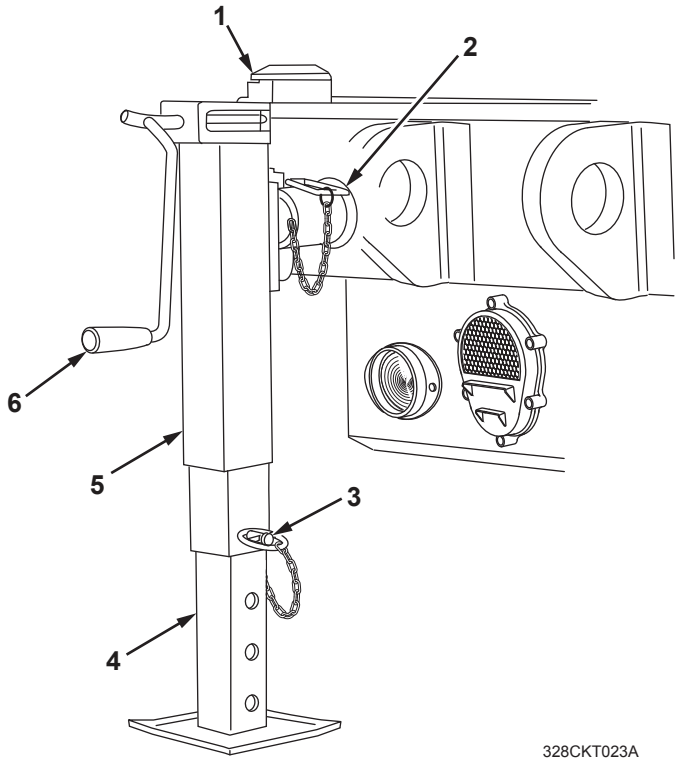

Figure 26. Leveling Jacks Installation.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATION UNDER UNUSUAL CONDITIONS

INITIAL SETUP:

References
FM 90-3
TB 43-0213
TB 43-0239
TC 21-305-20

References (cont.)
TM 4-33.31
WP 0030
WP 0073

OPERATION IN EXTREME COLD

Startup

CAUTION

Be careful when placing the trailer in motion after a shutdown. Congealed lubricants can cause part failure. Failure to comply may result in equipment damage.

1. Tires may freeze to the ground or tire flat spotting may occur if tires are underinflated.
2. Brake shoes may freeze to the brake drums and must be heated to prevent damage to mating surfaces.
3. Refer to TM 4-33.31 and TC 21-305-20 for special instructions on driving hazards in snow and ice that may be encountered during extremely cold weather conditions.

Shutdown

1. For short periods, park in a sheltered spot out of the wind; for longer shutdown periods, if high, dry ground is not available, prepare a footing of planks or brush.
2. Remove all buildup of ice and snow as soon as possible after shutdown.
3. Cover and shield the trailer with canvas covers if available. Keep ends of covers off ground to keep them from freezing to the ground.
4. Drain air/moisture from air reservoir tanks (WP 0030).

END OF TASK

OPERATION IN EXTREME HEAT

1. Refer to TB 43-0239 and FM 90-3 for maintenance and operations, respectively, under desert conditions.
2. DO NOT park the trailer in sunlight for a long time. Heat and sunlight shorten tire life.
3. Park the trailer where it will get maximum protection from heat, sun, and dust.

END OF TASK

OPERATION IN RAINY OR HUMID CONDITIONS

Frequently inspect, clean, and lubricate inactive equipment to prevent rust and fungus accumulation.

END OF TASK

OPERATION IN SALTWATER AREAS

Saltwater will cause rapid corrosion of metal parts. After operation, wash the trailer with fresh water. Clean, inspect, and lubricate equipment frequently. Refer to TB 43-0213 for further information about corrosion.

END OF TASK

OPERATION IN SNOW

Refer to TC 21-305-20 for special instructions on operation in snow.

END OF TASK

OPERATION IN MUD OR SAND

CAUTION

DO NOT tow, pull, push, or lift trailer using rear bumper. Failure to comply may result in equipment damage.

1. If wheels sink into mud/sand, you may need to jack up the mired wheels and put planking or matting under them.
2. After operation in mud or sand, clean, inspect, and lubricate the trailer.

END OF TASK

OPERATION IN ROCKY TERRAIN

1. Before driving over stumps or rocks, ensure that the trailer can clear them. Such objects can damage components on the underside of the trailer. Beware of low-hanging limbs that can damage cargo.
2. Ensure you have a serviceable spare tire because there is a greater chance of tire puncture.

END OF TASK

FORDING

CAUTION

- Immediately after fording, apply service brakes to expel water from air brake chamber. If fording in saltwater, flush chambers with fresh low-pressure water when mission allows. Failure to comply may result in equipment damage.
- DO NOT exceed fording depth of 30 in. (76.2 cm). Failure to comply may result in equipment damage.

Before Fording

Before entering water, check bottom surface conditions. If bottom surface is too soft, do not ford.

After Fording

1. After coming out of water, apply brakes a few times to help dry out brake linings. Ensure trailer brakes are working before driving at normal speeds.
2. Drain or dry all areas where water has collected if mission allows.
3. Lubricate all unpainted surfaces. See lubrication chart, WP 0073, if mission allows.
4. Lubrication fittings and hubs should not be affected by fording. Oil can points should be lubricated as specified by WP 0073 if mission allows. There is no need to tear down wheel ends or clean and repack bearings.

END OF TASK

END OF WORK PACKAGE

CHAPTER 3

OPERATOR TROUBLESHOOTING PROCEDURES

WORK PACKAGE INDEX

Title	WP Sequence No.
OPERATOR TROUBLESHOOTING PROCEDURES — TROUBLESHOOTING INTRODUCTION AND SYMPTOM INDEX	WP 0007
OPERATOR TROUBLESHOOTING PROCEDURES — ALL TRAILER LAMPS/LEDs FAIL TO LIGHT	WP 0008
OPERATOR TROUBLESHOOTING PROCEDURES — ONE OR MORE LAMPS/LEDs DO NOT OPERATE PROPERLY	WP 0009
OPERATOR TROUBLESHOOTING PROCEDURES — DIM OR FLICKERING LAMPS/LEDs	WP 0010
OPERATOR TROUBLESHOOTING PROCEDURES — BRAKES WILL NOT RELEASE	WP 0011
OPERATOR TROUBLESHOOTING PROCEDURES — BRAKES GRAB	WP 0012
OPERATOR TROUBLESHOOTING PROCEDURES — LANDING LEG/LEVELING JACKS DIFFICULT TO RAISE OR LOWER	WP 0013
OPERATOR TROUBLESHOOTING PROCEDURES — ABNORMAL OR UNEVEN TIRE WEAR	WP 0014
OPERATOR TROUBLESHOOTING PROCEDURES — WHEEL WOBBLES	WP 0015

OPERATOR MAINTENANCE
OPERATOR TROUBLESHOOTING PROCEDURES — TROUBLESHOOTING INTRODUCTION AND SYMPTOM INDEX

GENERAL

1. This Work Package (WP) provides information for identifying and correcting malfunctions that may develop while operating or maintaining the XCK2000 and XCK2000E1 trailers.
2. The Operator Troubleshooting Symptom Index lists common malfunctions that may occur and refers you to the proper WP in WP 0008 through WP 0015 for a troubleshooting procedure.
3. If you are unsure of an item mentioned, refer to WP 0002 or the maintenance task where the item is replaced.
4. Before performing a troubleshooting procedure, read and follow all safety instructions in the Warning Summary at the front of this manual.
5. This WP cannot list all malfunctions that may occur or all tests, inspections, and corrective actions. If the appropriate symptom is not listed, notify Field Maintenance.
6. When troubleshooting a malfunction:
    a. Locate the symptom or symptoms that best describe the malfunction.
    b. Refer to WP 0008 through WP 0015 where the troubleshooting procedure for the malfunction in question is described. Each troubleshooting procedure is organized using the following headings: Symptom, Malfunction, and Corrective Action.
    c. Perform each Corrective Action step in order listed until the malfunction is corrected. DO NOT perform any maintenance task unless the troubleshooting procedure tells you to do so.

EXPLANATION OF HEADINGS

The headings in WP 0008 through WP 0015 are defined as follows:

1. **SYMPTOM.** A visual or operational indication that something is wrong with the equipment.
2. **MALFUNCTION.** Equipment defect that may cause the symptom.
3. **CORRECTIVE ACTION.** A procedure to correct the problem.

OPERATOR TROUBLESHOOTING SYMPTOM INDEX

	Malfunction/Symptom	Troubleshooting Procedure
1.	All Trailer Lamps/LEDs Fail to Light	WP 0008
2.	One or More Lamps/LEDs Do Not Operate Properly	WP 0009
3.	Dim or Flickering Lamps/LEDs	WP 0010
4.	Brakes Will Not Release	WP 0011
5.	Brakes Grab	WP 0012
6.	Landing Leg/Leveling Jacks are Difficult to Raise or Lower	WP 0013
7.	Abnormal or Uneven Tire Wear	WP 0014
8.	Wheel Wobbles	WP 0015

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATOR TROUBLESHOOTING PROCEDURES — ALL TRAILER LAMPS/LEDS FAIL TO LIGHT

INITIAL SETUP:

References
WP 0036

Equipment Condition
Vehicle parked on level surface (WP 0005)

Equipment Condition (cont.)
Gladhands disconnected (WP 0005)
Wheels chocked (WP 0005)
Intervehicular cable connected to prime mover (WP 0005)

TROUBLESHOOTING PROCEDURE

ALL TRAILER LAMPS/LEDs FAIL TO LIGHT

WARNING

Disconnect electrical power from trailer before performing any cleaning or maintenance of electrical system to avoid being shocked. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

SYMPTOM

ALL TRAILER LAMPS/LEDs FAIL TO LIGHT

MALFUNCTION

PRIME MOVER LIGHTS WILL NOT OPERATE

CORRECTIVE ACTION

1. Set light panel switches in prime mover to correct positions; refer to operator manual for prime mover.
2. If prime mover lights still do not work, notify Field Maintenance.

MALFUNCTION

INTERVEHICULAR POWER CABLE NOT PROPERLY CONNECTED TO PRIME MOVER

CORRECTIVE ACTION

Pull connector out and reset fully into receptacle.

ALL TRAILER LAMPS/LEDs FAIL TO LIGHT - Continued

MALFUNCTION

DIRTY, CORRODED, OR DAMAGED PINS

CORRECTIVE ACTION

1. Clean dirty or corroded pins as required (WP 0036).
2. If pins are damaged, notify Field Maintenance.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATOR TROUBLESHOOTING PROCEDURES —
ONE OR MORE LAMPS/LEDS DO NOT OPERATE PROPERLY

INITIAL SETUP:

References
WP 0036

Equipment Condition
Vehicle parked on level surface

Equipment Condition (cont.)
Gladhands disconnected (WP 0005)
Wheels chocked (WP 0005)
Intervehicular cable connected to prime mover (WP 0005)

TROUBLESHOOTING PROCEDURE

ONE OR MORE LAMPS/LEDs DO NOT OPERATE PROPERLY

WARNING

Disconnect electrical power from trailer before performing any cleaning or maintenance of electrical system to avoid being shocked. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

SYMPTOM

ONE OR MORE LAMPS/LEDs DO NOT OPERATE PROPERLY

MALFUNCTION

BURNED OUT OR DEFECTIVE LAMPS/LEDs

CORRECTIVE ACTION

Notify Field Maintenance.

MALFUNCTION

DIRTY OR CORRODED CONNECTORS

CORRECTIVE ACTION

Clean connectors as required (WP 0036).

ONE OR MORE LAMPS/LEDs DO NOT OPERATE PROPERLY - Continued

MALFUNCTION

BROKEN WIRES OR LOOSE CONNECTIONS

CORRECTIVE ACTION

Notify Field Maintenance.

MALFUNCTION

DAMAGED LAMP/LED ASSEMBLY

CORRECTIVE ACTION

Notify Field Maintenance.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATOR TROUBLESHOOTING PROCEDURES — DIM OR FLICKERING LAMPS/LEDS

INITIAL SETUP:

References
WP 0036

Equipment Condition
Vehicle parked on level surface

Equipment Condition (cont.)
Gladhands disconnected (WP 0005)
Wheels chocked (WP 0005)
Intervehicular cable connected to prime mover (WP 0005)

TROUBLESHOOTING PROCEDURE

DIM OR FLICKERING LAMPS/LEDs

WARNING

Disconnect electrical power from trailer before performing any cleaning or maintenance of electrical system to avoid being shocked. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

SYMPTOM

DIM OR FLICKERING LAMPS/LEDs

MALFUNCTION

LOOSE, DIRTY, OR CORRODED LAMP/LED ELECTRICAL CONNECTOR PINS

CORRECTIVE ACTION

1. Tighten loose connectors.
2. Clean dirty or corroded pins as required (WP 0036).
3. If pins are damaged, notify Field Maintenance.

MALFUNCTION

BURNED OUT OR DEFECTIVE LAMPS/LEDs

CORRECTIVE ACTION

Notify Field Maintenance.

DIM OR FLICKERING LAMPS/LEDs - Continued

MALFUNCTION

DIRTY, CORRODED, OR DAMAGED INTERVEHICULAR POWER CABLE CONNECTOR PINS

CORRECTIVE ACTION

1. Clean dirty or corroded pins as required (WP 0036).
2. If pins are damaged, notify Field Maintenance.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATOR TROUBLESHOOTING PROCEDURES — BRAKES WILL NOT RELEASE

INITIAL SETUP:

References
WP 0038

Equipment Condition
Vehicle parked on level surface (WP 0005)

Equipment Condition (cont.)
Wheels chocked (WP 0005)
Intervehicular cable connected to prime mover (WP 0005)

TROUBLESHOOTING PROCEDURE

BRAKES WILL NOT RELEASE

SYMPTOM

BRAKES WILL NOT RELEASE

MALFUNCTION

SHUT-OFF VALVES CLOSED AT PRIME MOVER

CORRECTIVE ACTION

Ensure shut-off valves are fully opened; refer to operator manual for prime mover.

MALFUNCTION

PRESSURE GAUGE IN PRIME MOVER BELOW 95 psi (655 kPa)

CORRECTIVE ACTION

1. Build up air pressure to normal level.
2. If pressure is low and/or will not build up, notify Field Maintenance.

MALFUNCTION

AIR LINES ARE NOT PROPERLY CONNECTED AT GLADHANDS

CORRECTIVE ACTION

Ensure air lines are properly connected (Emergency (red) to Emergency (red) and Service (blue) to Service (blue)).

BRAKES WILL NOT RELEASE - Continued

MALFUNCTION

DIRTY OR DAMAGED PACKING IN GLADHANDS

CORRECTIVE ACTION

1. If packing is dirty, clean packing (WP 0038).
2. Ensure packing is cleaned and not damaged. If damaged, notify Field Maintenance.
3. If seal is leaking or missing, notify Field Maintenance.

MALFUNCTION

AIR LINE CONNECTIONS LEAK

CORRECTIVE ACTION

Notify Field Maintenance.

MALFUNCTION

DRAIN VALVE ON EACH RESERVOIR TANK LEAKING

CORRECTIVE ACTION

1. Ensure drain valve on each air reservoir tank is closed (WP 0005).
2. If drain valve still leaks, notify Field Maintenance.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATOR TROUBLESHOOTING PROCEDURES — BRAKES GRAB

INITIAL SETUP:

Equipment Condition
Vehicle parked on level surface (WP 0005)
Trailer properly connected to prime mover (WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

BRAKES GRAB

SYMPTOM

BRAKES GRAB

MALFUNCTION

MOISTURE IN AIR RESERVOIR TANKS

CORRECTIVE ACTION

WARNING

Wear eye protection when opening air reservoir drain valve and avoid contact with the air stream. Failure to comply may result in personnel injury. Seek medical attention in event of injury.

1. Open each drain valve to see if moisture is present (WP 0005).
2. If reservoir is dry and above symptom still exists, notify Field Maintenance.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATOR TROUBLESHOOTING PROCEDURES —
LANDING LEG/LEVELING JACKS DIFFICULT TO RAISE OR LOWER

INITIAL SETUP:

References
WP 0037

Equipment Condition
Vehicle parked on level surface

Equipment Condition (cont.)
Trailer properly connected to prime mover (WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

LANDING LEG/LEVELING JACKS DIFFICULT TO RAISE OR LOWER

SYMPTOM

LANDING LEG/LEVELING JACKS DIFFICULT TO RAISE OR LOWER

MALFUNCTION

DAMAGED OR BROKEN CRANK HANDLE

CORRECTIVE ACTION

If crank handle is damaged or broken, notify Field Maintenance.

MALFUNCTION

DIRT ON LOWER LEG

CORRECTIVE ACTION

Clean lower landing leg (WP 0037).

MALFUNCTION

DAMAGED OR BENT LANDING LEGS

CORRECTIVE ACTION

Notify Field Maintenance.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATOR TROUBLESHOOTING PROCEDURES — ABNORMAL OR UNEVEN TIRE WEAR

INITIAL SETUP:

References
WP 0030

Equipment Condition
Vehicle parked on level surface (WP 0005)

Equipment Condition (cont.)
Gladhands disconnected (WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

ABNORMAL OR UNEVEN TIRE WEAR

SYMPTOM

ABNORMAL OR UNEVEN TIRE WEAR

MALFUNCTION

INCORRECT TIRE PRESSURE

CORRECTIVE ACTION

Ensure tire pressure is set to 75 psi (517 kPa) (WP 0030).

MALFUNCTION

SPRINGS OF SUSPENSION SYSTEM DAMAGED AND LOOSE, OR MISSING BOLTS AND NUTS

CORRECTIVE ACTION

Notify Field Maintenance.

MALFUNCTION

WHEELS/AXLES POSSIBLY MISALIGNED

CORRECTIVE ACTION

Notify Field Maintenance.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATOR TROUBLESHOOTING PROCEDURES — WHEEL WOBBLES

INITIAL SETUP:

References
WP 0033

Equipment Condition
Vehicle parked on level surface

Equipment Condition (cont.)
Gladhands disconnected (WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

WHEEL WOBBLES

SYMPTOM

WHEEL WOBBLES

MALFUNCTION

MISSING OR LOOSE STUDS OR LUG NUTS

CORRECTIVE ACTION

1. Tighten nuts (WP 0033).
2. Notify Field Maintenance to apply proper torque.

MALFUNCTION

CRACKED OR BROKEN WHEELS

CORRECTIVE ACTION

Notify Field Maintenance if wheels are cracked or broken.

END OF WORK PACKAGE

CHAPTER 4

FIELD TROUBLESHOOTING PROCEDURES

WORK PACKAGE INDEX

Title	WP Sequence No.
FIELD TROUBLESHOOTING PROCEDURES — TROUBLESHOOTING INTRODUCTION AND SYMPTOM INDEX	WP 0016
FIELD TROUBLESHOOTING PROCEDURES — ALL TRAILER LAMPS/LEDs FAIL TO LIGHT	WP 0017
FIELD TROUBLESHOOTING PROCEDURES — ONE OR MORE LAMPS/LEDs DO NOT OPERATE PROPERLY	WP 0018
FIELD TROUBLESHOOTING PROCEDURES - BRAKES WILL NOT RELEASE	WP 0019
FIELD TROUBLESHOOTING PROCEDURES — NO BRAKES OR WEAK BRAKES	WP 0020
FIELD TROUBLESHOOTING PROCEDURES — SLOW BRAKE APPLICATION OR RELEASE	WP 0021
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FIELD TROUBLESHOOTING PROCEDURES — BRAKES OVERHEAT WHILE DRIVING	WP 0023
FIELD TROUBLESHOOTING PROCEDURES — DIFFICULTY IN TURNING LANDING LEG AND/OR LEVELING JACKS HAND CRANK	WP 0024
FIELD TROUBLESHOOTING PROCEDURES — TRAILER PULLS TO ONE SIDE	WP 0025
FIELD TROUBLESHOOTING PROCEDURES — IMPROPER SPRING ACTION	WP 0026
FIELD TROUBLESHOOTING PROCEDURES — EXCESSIVELY WORN, SCUFFED, OR CUPPED TIRES	WP 0027
FIELD TROUBLESHOOTING PROCEDURES — IMPROPER VEHICLE TRACKING	WP 0028

FIELD MAINTENANCE
FIELD TROUBLESHOOTING PROCEDURES — TROUBLESHOOTING INTRODUCTION AND SYMPTOM INDEX

GENERAL

1. This Work Package (WP) provides information for identifying and correcting malfunctions that may develop while operating or maintaining the XCK2000 and XCK2000E1 trailers.
2. The Field Troubleshooting Symptom Index lists common symptoms that may occur and refers you to the proper WP in WP 0017 through WP 0028 for a troubleshooting procedure.
3. If you are unsure of an item mentioned, refer to WP 0002 or the maintenance task where the item is replaced.
4. Before performing a troubleshooting procedure, read and follow all safety instructions in the Warning Summary at the front of this manual.
5. This WP cannot list all malfunctions that may occur or all tests, inspections, and corrective actions. If the appropriate symptom is not listed, notify supervisor.
6. When troubleshooting a malfunction:
   a. Locate the symptom or symptoms below that best describes the malfunction.
   b. Refer to WP 0017 through WP 0028 where the troubleshooting procedure for the malfunction in question is described. Each troubleshooting procedure is organized using the following headings: "Symptom," "Malfunction," and "Corrective Action."
   c. Perform each Corrective Action step in order listed until the malfunction is corrected. DO NOT perform any maintenance task unless the troubleshooting procedure tells you to do so.

EXPLANATION OF HEADINGS

The headings in WP 0017 through WP 0028 are defined as follows:

1. **SYMPTOM.** A visual or operational indication that something is wrong with the equipment.
2. **MALFUNCTION.** Equipment defect that may cause the symptom.
3. **CORRECTIVE ACTION.** A procedure to correct the problem.

FIELD TROUBLESHOOTING SYMPTOM INDEX

	Malfunction/Symptom	Troubleshooting Procedure
1.	All Trailer Lamps/LEDs Fail to Light	WP 0017
2.	One or More Lamps/LEDs Do Not Operate Properly	WP 0018
3.	Brakes Will Not Release	WP 0019
4.	No Brakes or Weak Brakes	WP 0020
5.	Slow Brake Application or Release	WP 0021
6.	Brakes Grab	WP 0022
7.	Brakes Overheat While Driving	WP 0023
8.	Difficulty in Turning Hand Crank	WP 0024
9.	Trailer Pulls to One Side	WP 0025
10.	Improper Spring Action	WP 0026
11.	Excessively Worn, Scuffed, or Cupped Tires	WP 0027
12.	Improper Vehicle Tracking	WP 0028

END OF WORK PACKAGE

FIELD MAINTENANCE
FIELD TROUBLESHOOTING PROCEDURES — ALL TRAILER LAMPS/LEDS FAIL TO LIGHT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's (WP 0109, Table 1, Item 15)

References
WP 0044

Equipment Condition
Vehicle parked on level surface (WP 0005)

Equipment Condition (cont.)
Trailer properly connected to prime mover (WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

ALL TRAILER LAMPS/LEDs FAIL TO LIGHT

SYMPTOM

ALL TRAILER LAMPS/LEDs FAIL TO LIGHT

MALFUNCTION

TRIPPED CIRCUIT BREAKERS OR BLOWN FUSES ON PRIME MOVER

CORRECTIVE ACTION

WARNING

Disconnect electrical power from trailer before performing any cleaning or maintenance of electrical system to avoid being shocked. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

1. Reset opened circuit breaker; refer to maintenance manual for prime mover.
2. Replace blown fuse; refer to maintenance manual for prime mover.

ALL TRAILER LAMPS/LEDs FAIL TO LIGHT - Continued

MALFUNCTION

WIRING HARNESS HAS BARE SPOTS IN INSULATION

CORRECTIVE ACTION

Repair chassis wiring harness as necessary (WP 0044).

END OF WORK PACKAGE

FIELD MAINTENANCE
FIELD TROUBLESHOOTING PROCEDURES —
ONE OR MORE LAMPS/LEDS DO NOT OPERATE PROPERLY

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)
Multimeter
(WP 0109, Table 1, Item 5)

References
WP 0036
WP 0040
WP 0041

References (cont.)
WP 0042
WP 0044

Equipment Condition
Vehicle parked on level surface (WP 0005)
Trailer properly connected to prime mover
(WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

ONE OR MORE LAMPS/LEDs DO NOT OPERATE PROPERLY

SYMPTOM

ONE OR MORE LAMPS/LEDs DO NOT OPERATE PROPERLY

MALFUNCTION

DEFECTIVE LAMP BULBS/LEDs

CORRECTIVE ACTION

Replace defective lamp bulbs/LEDs (WP 0040), (WP 0041), and (WP 0042).

MALFUNCTION

LOOSE, DIRTY OR CORRODED CONNECTORS

CORRECTIVE ACTION

Clean terminal assemblies and electrical contacts as required (WP 0036).

MALFUNCTION

DAMAGED LAMP/LEDs ASSEMBLY

CORRECTIVE ACTION

Replace lamp/LEDs assemblies if damaged (WP 0040), (WP 0041), and (WP 0042).

ONE OR MORE LAMPS/LEDs DO NOT OPERATE PROPERLY - Continued

MALFUNCTION

WIRE IN CABLE BROKEN OR SHORTED, OR CONNECTION IN PLUG/RECEPTACLE LOOSE

CORRECTIVE ACTION

Tighten loose connections. Repair or replace as necessary (WP 0044).

END OF WORK PACKAGE

FIELD MAINTENANCE
FIELD TROUBLESHOOTING PROCEDURES — BRAKES WILL NOT RELEASE

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Detergent (WP 0108, Table 1, Item 10)

Personnel Required
(2)

References
WP 0047

References (cont.)
WP 0050
WP 0051
WP 0056

Equipment Condition
Vehicle parked on level surface (WP 0005)
Trailer properly connected to prime mover (WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

BRAKES WILL NOT RELEASE

SYMPTOM

BRAKES WILL NOT RELEASE

MALFUNCTION

IMPROPER POSITION OF BRAKE VALVE ON PRIME MOVER

CORRECTIVE ACTION

Move brake valve to release position; refer to operator manual for prime mover.

MALFUNCTION

IMPROPER AIR HOSES CONNECTION TO PRIME MOVER

CORRECTIVE ACTION

Reconnect gladhands if air hoses are not properly connected (Emergency (red) to Emergency (red), Service (blue) to Service (blue)) (WP 0005).

BRAKES WILL NOT RELEASE - Continued

MALFUNCTION

IMPROPER POSITION OF SHUT-OFF VALVES AT PRIME MOVER

CORRECTIVE ACTION

1. If prime mover is not equipped with shut-off valves, go to next malfunction.
2. If air line valves are shut off, open them fully.

MALFUNCTION

AIR PRESSURE GAUGE ON PRIME MOVER BELOW 95 psi (655 kPa)

CORRECTIVE ACTION

1. Build up pressure to normal level.
2. If air pressure is low and will not build up, troubleshoot prime mover air system; refer to maintenance manual for prime mover.

MALFUNCTION

RESTRICTION IN SERVICE AIR AND EMERGENCY AIR LINES

CORRECTIVE ACTION

If air lines or hoses are restricted, replace or repair as required (WP 0051).

BRAKES WILL NOT RELEASE - Continued

MALFUNCTION

SPRING BRAKE CHAMBER LEAKS AT CLAMP BANDS AND HOSE FITTINGS

CORRECTIVE ACTION

WARNING

- To prevent injury, keep hands away from spring brake chamber pushrods and slack adjusters. They will move as service brakes are operated and will automatically apply if system pressure drops. Hands and fingers may be pinched or cut by moving parts. Failure to comply may result in personnel injury. Seek medical attention in event of injury.
- Disassembly of spring brake chambers is NOT authorized. When inspecting or caging spring brake chambers, DO NOT position yourself in front of or in line with the chamber. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Before performing any work on the air brake system, chock front and rear wheels to prevent trailer movement. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Wear eye protection when under trailer. Failure to comply may result in personnel injury. Seek medical attention in event of injury.
- All spring brake chambers must be caged before you work on the air brake system. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

1. Apply soapy water at clamp bands and hose fittings.
2. If spring brake chamber clamp band leaks, replace spring brake chamber (WP 0050).
3. If hose fitting leaks, tighten hose fitting or replace hose (WP 0051).

MALFUNCTION

BROKEN BRAKE SHOE TENSION SPRINGS

CORRECTIVE ACTION

1. Remove brake drum to inspect the brake shoe tension (WP 0056).
2. If brake shoe tension spring is broken, replace (WP 0047).

END OF WORK PACKAGE

FIELD MAINTENANCE
FIELD TROUBLESHOOTING PROCEDURES — NO BRAKES OR WEAK BRAKES

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Personnel Required
(2)

References
WP 0047
WP 0048
WP 0049

References (cont.)
WP 0050
WP 0051
WP 0054
WP 0056

Equipment Condition
Vehicle parked on level surface (WP 0005)
Trailer properly connected to prime mover (WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

NO BRAKES OR WEAK BRAKES

SYMPTOM

NO BRAKES OR WEAK BRAKES

MALFUNCTION

IMPROPER AIR HOSE CONNECTION TO PRIME MOVER

CORRECTIVE ACTION

Reconnect gladhands if air hoses are not properly connected (Emergency (red) to Emergency (red), Service (blue) to Service (blue)) (WP 0005).

MALFUNCTION

POSITION OF SHUT-OFF VALVES AT PRIME MOVER

CORRECTIVE ACTION

1. If prime mover is not equipped with shut-off valves, go to next malfunction.
2. If air line valves are shut off, open them fully. Refer to operator manual for prime mover.

NO BRAKES OR WEAK BRAKES - Continued

MALFUNCTION

DRAIN VALVE ON EACH AIR RESERVOIR TANK LEAKING

CORRECTIVE ACTION

1. Ensure drain valve on each air reservoir tank is closed (WP 0005).
2. If drain valve still leaks, replace drain valve (WP 0054).

MALFUNCTION

AIR PRESSURE GAUGE ON PRIME MOVER BELOW 95 psi (655 kPa)

CORRECTIVE ACTION

1. Build up pressure to normal level.
2. If air pressure is low and will not build up, troubleshoot prime mover air system; refer to maintenance manual for prime mover.

MALFUNCTION

AIR LINES AND CONNECTORS RESTRICTED OR LEAK

CORRECTIVE ACTION

Remove any restrictions from hoses and tighten connections. Repair or replace air lines as necessary (WP 0051).

NO BRAKES OR WEAK BRAKES - Continued

MALFUNCTION

SPRING BRAKE CHAMBER LEAKS AT CLAMP BANDS AND HOSE FITTINGS

CORRECTIVE ACTION

WARNING

- To prevent injury, keep hands away from spring brake chamber pushrods and slack adjusters. They will move as service brakes are operated and will automatically apply if system pressure drops. Hands and fingers may be pinched or cut by moving parts. Failure to comply may result in personnel injury. Seek medical attention in event of injury.
- Disassembly of spring brake chambers is NOT authorized. When inspecting or caging spring brake chambers, DO NOT position yourself in front of or in line with the chamber. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Before performing any work on the air brake system, chock front and rear wheels to prevent trailer movement. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Wear eye protection when under trailer. Failure to comply may result in personnel injury. Seek medical attention in event of injury.
- All spring brake chambers must be caged before you work on the air brake system. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

1. Apply soapy water to clamp bands and hose fittings.
2. If spring brake chamber clamp band leaks, replace spring brake chamber (WP 0050).
3. If hose fitting leaks, tighten hose fitting or replace hose (WP 0051).

MALFUNCTION

BRAKES NOT PROPERLY ADJUSTED

CORRECTIVE ACTION

1. Adjust brakes (WP 0047).
2. If slack adjuster is defective, replace (WP 0049).

MALFUNCTION

WORN-OUT BRAKE LINING

CORRECTIVE ACTION

1. Remove brake drum to inspect brake lining (WP 0056).

NO BRAKES OR WEAK BRAKES - Continued

CORRECTIVE ACTION - Continued

2. If brake lining is worn, replace brake shoe (WP 0047).

MALFUNCTION

GREASE ON BRAKE LINING

CORRECTIVE ACTION

1. If camshaft seal leaks, replace seal (WP 0048) and brake shoes (WP 0047).
2. If wheel hub seal leaks, replace seal (WP 0056) and brake shoes (WP 0047).

MALFUNCTION

BROKEN OR FROZEN CAMSHAFT ROLLER

CORRECTIVE ACTION

If camshaft roller is broken or frozen, replace (WP 0047).

END OF WORK PACKAGE

FIELD MAINTENANCE
FIELD TROUBLESHOOTING PROCEDURES — SLOW BRAKE APPLICATION OR RELEASE

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Detergent (WP 0108, Table 1, Item 10)

Personnel Required
(2)

References
WP 0047

References (cont.)
WP 0050
WP 0051
WP 0056

Equipment Condition
Vehicle parked on level surface (WP 0005)
Trailer properly connected to prime mover (WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

SLOW BRAKE APPLICATION OR RELEASE

SYMPTOM

SLOW BRAKE APPLICATION OR RELEASE

MALFUNCTION

AIR PRESSURE GAUGE ON PRIME MOVER BELOW 95 psi (655 kPa)

CORRECTIVE ACTION

1. Build up pressure to normal level.
2. If air pressure is low and will not build up, troubleshoot prime mover air system; refer to maintenance manual for prime mover.

MALFUNCTION

AIR LINES AND CONNECTORS RESTRICTED OR LEAK

CORRECTIVE ACTION

Remove any restrictions from hoses and tighten connections. Repair or replace as necessary (WP 0051).

SLOW BRAKE APPLICATION OR RELEASE - Continued

MALFUNCTION

SPRING BRAKE CHAMBER LEAKS AT CLAMP BANDS AND HOSE FITTINGS

CORRECTIVE ACTION

WARNING

- To prevent injury, keep hands away from spring brake chamber pushrods and slack adjusters. They will move as service brakes are operated and will automatically apply if system pressure drops. Hands and fingers may be pinched or cut by moving parts. Failure to comply may result in personnel injury. Seek medical attention in event of injury.
- Disassembly of spring brake chambers is NOT authorized. When inspecting or caging spring brake chambers, DO NOT position yourself in front of or in line with the chamber. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Before performing any work on the air brake system, chock front and rear wheels to prevent trailer movement. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Wear eye protection when under trailer. Failure to comply may result in personnel injury. Seek medical attention in event of injury.
- All spring brake chambers must be caged before you work on the air brake system. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

1. Apply soapy water at clamp bands and hose fittings.
2. If spring brake chamber clamp band leaks, replace spring brake chamber (WP 0050).
3. If hose fitting leaks, tighten hose fitting or replace hose (WP 0051).

MALFUNCTION

BROKEN BRAKE SHOE TENSION SPRINGS

CORRECTIVE ACTION

1. Remove brake drum to inspect brake shoe tension (WP 0056).
2. If brake shoe tension spring is broken, replace (WP 0047).

SLOW BRAKE APPLICATION OR RELEASE - Continued

MALFUNCTION

BROKEN OR FROZEN CAMSHAFT ROLLER

CORRECTIVE ACTION

If camshaft roller is broken or frozen, replace (WP 0047).

END OF WORK PACKAGE

FIELD MAINTENANCE
FIELD TROUBLESHOOTING PROCEDURES — BRAKES GRAB

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Personnel Required
(2)

References
WP 0047
WP 0048

References (cont.)
WP 0049
WP 0056

Equipment Condition
Vehicle parked on level surface (WP 0005)
Trailer properly connected to prime mover (WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

BRAKES GRAB

SYMPTOM

BRAKES GRAB

MALFUNCTION

MOISTURE IN AIR RESERVOIR TANKS

CORRECTIVE ACTION

WARNING

Wear eye protection when opening air reservoir drain valve and avoid contact with the air stream. Failure to comply may result in personnel injury. Seek medical attention in event of injury.

Open drain valves and allow moisture to drain (WP 0005).

MALFUNCTION

BRAKES NOT PROPERLY ADJUSTED

CORRECTIVE ACTION

1. Adjust brakes (WP 0047).
2. If any of the slack adjusters are defective, replace (WP 0049).

BRAKES GRAB - Continued

MALFUNCTION

LOOSE OR WORN WHEEL BEARINGS

CORRECTIVE ACTION

1. If wheel bearings are loose, adjust (WP 0056).
2. If wheel bearings cannot be adjusted, replace (WP 0056).

MALFUNCTION

GREASE ON BRAKE LINING

CORRECTIVE ACTION

1. If camshaft O-ring leaks, replace O-ring (WP 0048) and brake shoes (WP 0047).
2. If wheel hub seal leaks, replace seal (WP 0056) and brake shoes (WP 0047).

MALFUNCTION

BROKEN OR FROZEN CAMSHAFT ROLLER

CORRECTIVE ACTION

1. If camshaft roller is broken or frozen, replace (WP 0047).
2. If camshaft is defective, replace (WP 0048).

MALFUNCTION

WORN-OUT BRAKE LINING

CORRECTIVE ACTION

If brake lining is worn, replace brake shoe (WP 0047).

MALFUNCTION

CRACKED, SCORED, OR DEFORMED BRAKE DRUM

CORRECTIVE ACTION

If brake drum is cracked, scored, or deformed, replace (WP 0056).

END OF WORK PACKAGE

FIELD MAINTENANCE
FIELD TROUBLESHOOTING PROCEDURES — BRAKES OVERHEAT WHILE DRIVING

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Personnel Required
(2)

References
WP 0047
WP 0048

References (cont.)
WP 0049
WP 0056

Equipment Condition
Vehicle parked on level surface (WP 0005)
Trailer properly connected to prime mover (WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

BRAKES OVERHEAT WHILE DRIVING

SYMPTOM

BRAKES OVERHEAT WHILE DRIVING

MALFUNCTION

BRAKES NOT PROPERLY ADJUSTED

CORRECTIVE ACTION

1. Adjust brakes (WP 0047).
2. If slack adjuster is defective, replace (WP 0049).

MALFUNCTION

BROKEN BRAKE SHOE TENSION SPRINGS

CORRECTIVE ACTION

1. If brake drum is cracked, scored, or deformed, replace (WP 0056).
2. If brake shoe tension spring is broken, replace (WP 0047).

BRAKES OVERHEAT WHILE DRIVING - Continued

MALFUNCTION

BROKEN OR FROZEN CAMSHAFT ROLLER

CORRECTIVE ACTION

1. If camshaft roller is broken or frozen, replace (WP 0047).
2. If camshaft is defective, replace (WP 0048).

MALFUNCTION

CRACKED, SCORED, OR DEFORMED BRAKE DRUM

CORRECTIVE ACTION

If brake drum is cracked, scored, or deformed, replace (WP 0056).

END OF WORK PACKAGE

FIELD MAINTENANCE
FIELD TROUBLESHOOTING PROCEDURES —
DIFFICULTY IN TURNING LANDING LEG AND/OR LEVELING JACKS HAND CRANK

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

References
WP 0064

Equipment Condition
Vehicle parked on level surface (WP 0005)

Equipment Condition (cont.)
Trailer properly connected to prime mover
(WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

DIFFICULTY IN TURNING LANDING LEG AND/OR LEVELING JACKS HAND CRANK

SYMPTOM

DIFFICULTY IN TURNING LANDING LEG AND/OR LEVELING JACKS HAND CRANK

MALFUNCTION

BENT LOWER LEG

CORRECTIVE ACTION

If lower leg is bent, replace (WP 0064).

MALFUNCTION

LANDING LEG GEAR BOX NOISY

CORRECTIVE ACTION

1. Operate hand crank and listen for grinding gears or bearings in the gear box.
2. If gears or bearings grind and legs do not extend or retract properly, replace landing leg assembly (WP 0064).

END OF WORK PACKAGE

FIELD MAINTENANCE
FIELD TROUBLESHOOTING PROCEDURES — TRAILER PULLS TO ONE SIDE

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

References
WP 0023
WP 0056
WP 0065

Equipment Condition
Vehicle parked on level surface (WP 0005)

Equipment Condition (cont.)
Trailer properly connected to prime mover
(WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

TRAILER PULLS TO ONE SIDE

SYMPTOM

TRAILER PULLS TO ONE SIDE

MALFUNCTION

BRAKES DRAG

CORRECTIVE ACTION

If brakes are dragging, go to Brakes Overheat While Driving (WP 0023).

MALFUNCTION

LOOSE OR WORN WHEEL BEARINGS

CORRECTIVE ACTION

1. If wheel bearings are loose, adjust (WP 0056).
2. If wheel bearings cannot be adjusted, replace (WP 0056).

MALFUNCTION

AXLE OUT OF ALIGNMENT

CORRECTIVE ACTION

If axle is out of alignment, align axle (WP 0065).

TRAILER PULLS TO ONE SIDE - Continued

MALFUNCTION

LOOSE OR BROKEN SPRINGS

CORRECTIVE ACTION

If springs are loose or broken, repair as required (WP 0065).

END OF WORK PACKAGE

OPERATOR MAINTENANCE
FIELD TROUBLESHOOTING PROCEDURES — IMPROPER SPRING ACTION

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)
Torque Multiplier
(WP 0109, Table 1, Item 17)
Torque Wrench, 3/4 in. drive,
0 to 600 lb-ft (0 to 813 N•m)
(WP 0109, Table 1, Item 19)

References
WP 0065

Equipment Condition
Vehicle parked on level surface (WP 0005)

Equipment Condition (cont.)
Trailer properly connected to prime mover
(WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

IMPROPER SPRING ACTION

SYMPTOM

IMPROPER SPRING ACTION

MALFUNCTION

LOOSE SPRING TOP PLATE U-BOLTS

CORRECTIVE ACTION

If U-bolts are loose, torque U-bolt nuts to 285 lb-ft (386 N•m) (WP 0065).

MALFUNCTION

SPRINGS BROKEN OR WEAK LEAF SPRINGS

CORRECTIVE ACTION

If springs are broken or weak, replace (WP 0065).

IMPROPER SPRING ACTION - Continued

MALFUNCTION

AXLE OUT OF ALIGNMENT

CORRECTIVE ACTION

If axle is out of alignment, align axle (WP 0065).

END OF WORK PACKAGE

FIELD MAINTENANCE
FIELD TROUBLESHOOTING PROCEDURES — EXCESSIVELY WORN, SCUFFED, OR CUPPED TIRES

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

References
TM 9-2610-200-14
WP 0032
WP 0033

References (cont.)
WP 0056
WP 0065

Equipment Condition
Vehicle parked on level surface (WP 0005)
Trailer properly connected to prime mover (WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

EXCESSIVELY WORN, SCUFFED, OR CUPPED TIRES

SYMPTOM

EXCESSIVELY WORN, SCUFFED, OR CUPPED TIRES

MALFUNCTION

INCORRECT TIRE PRESSURE

CORRECTIVE ACTION

Correct tire pressure to 75 psi (517 kPa).

MALFUNCTION

LOOSE WHEEL AND TIRE ASSEMBLY

CORRECTIVE ACTION

If wheel and tire assembly is loose, torque lug nuts 225 to 250 lb-ft (305 to 339 N•m) (WP 0032).

MALFUNCTION

BENT WHEEL

CORRECTIVE ACTION

Replace wheel and tire assembly if wheel is bent (WP 0033).

EXCESSIVELY WORN, SCUFFED, OR CUPPED TIRES - Continued

MALFUNCTION

IMPROPER TIRE MATCHING

CORRECTIVE ACTION

NOTE

Radial tires and bias tires cannot be mixed on trailer.

If tires do not match, remove and match tires (TM 9-2610-200-14).

MALFUNCTION

LOOSE OR WORN WHEEL BEARINGS

CORRECTIVE ACTION

1. If wheel bearings are loose, adjust (WP 0056).
2. If wheel bearings cannot be adjusted, replace (WP 0056).

MALFUNCTION

CRACKED, SCORED, OR DEFORMED BRAKE DRUM

CORRECTIVE ACTION

If brake drum is cracked, scored, or deformed, replace (WP 0056).

MALFUNCTION

AXLE OUT OF ALIGNMENT

CORRECTIVE ACTION

If axle is out of alignment, align axle (WP 0065).

END OF WORK PACKAGE

FIELD MAINTENANCE
FIELD TROUBLESHOOTING PROCEDURES — IMPROPER VEHICLE TRACKING

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

References
WP 0046
WP 0065

Equipment Condition
Vehicle parked on level surface (WP 0005)

Equipment Condition (cont.)
Trailer properly connected to prime mover
(WP 0005)
Wheels chocked (WP 0005)

TROUBLESHOOTING PROCEDURE

IMPROPER VEHICLE TRACKING

SYMPTOM

IMPROPER VEHICLE TRACKING

MALFUNCTION

AXLE DAMAGED

CORRECTIVE ACTION

Replace damaged axle (WP 0046).

MALFUNCTION

AXLE OUT OF ALIGNMENT

CORRECTIVE ACTION

If axle is out of alignment, align axle (WP 0065).

MALFUNCTION

LOOSE SPRINGS

CORRECTIVE ACTION

Tighten loose springs (WP 0065).

END OF WORK PACKAGE

CHAPTER 5

OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INSTRUCTIONS

WORK PACKAGE INDEX

Title **WP Sequence No.**

OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION..... WP 0029
OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)..... WP 0030

OPERATOR MAINTENANCE
OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION

GENERAL

Preventive Maintenance Checks and Services (PMCS) means systematic caring, inspecting, and servicing of equipment to keep it in good condition and to prevent breakdowns. As the trailer's operator, your mission is to:

1. Perform your PMCS each time you operate the trailer. Always do your PMCS in the same order, so it gets to be a habit. Once you have had some practice, you will quickly spot anything wrong.
2. Do your BEFORE PMCS just before you operate the trailer. Pay attention to Warnings, Cautions, and Notes.
3. Do your DURING PMCS while you operate the trailer. DURING operation means to monitor the trailer and its related components while it is actually being operated. Pay attention to Warnings, Cautions, and Notes.
4. Do your AFTER PMCS right after operating the trailer. Pay attention to Warnings, Cautions, and Notes.
5. Do your WEEKLY PMCS once a week.
6. Do your MONTHLY PMCS once a month.
7. Use DA Form 2404 (Equipment Inspection and Maintenance Worksheet) or DA Form 5988-E to record any faults that you discover before, during, or after operation, unless you can fix them. You DO NOT need to record faults that you fix.
8. Be prepared to assist Field Maintenance when they lubricate the trailer. Perform any other services when required by Field Maintenance.

PMCS PROCEDURES

1. Operator PMCS Work Package (WP) lists inspections and care required to keep your trailer in good operating condition. It is set up so you can make your BEFORE operation checks as you walk around the trailer.
2. The ITEM NO. column provides a logical sequence for PMCS to be performed and is used as a source of item number for the TM ITEM NO. column when recording PMCS results on DA Form 2404 or DA Form 5988-E.
3. The INTERVAL column tells you when to do a certain check or service.
4. The ITEM TO BE CHECKED OR SERVICED column lists the item to check or service.
5. The PROCEDURE column tells you how to do the required check or service. Carefully follow these instructions. When instructed to do so, notify Field Maintenance.

NOTE

The terms "ready/available" and "mission capable" refer to the same status: Equipment is on hand and ready to perform its combat missions. (See DA PAM 750-8.)

6. EQUIPMENT NOT READY/AVAILABLE IF column tells you when your trailer is nonmission capable and why the trailer cannot be used.

PMCS PROCEDURES - Continued

7. When you do your PMCS, you will always need a rag or two. Following are checks that are common to the entire trailer:
   a. Keep It Clean. Dirt, grease, oil, and debris may cover up a serious problem. Clean as you work and as needed. Use cleaning solvent (WP 0108, Table 1, Item 5) on all metal surfaces. Use detergent (WP 0108, Table 1, Item 10) and water on rubber, plastic, and painted surfaces.
   b. Rust and Corrosion. Check trailer body and frame for rust and corrosion. If any bare metal or corrosion exists, clean and apply a thin coat of light oil.
   c. Bolts, Nuts, and Screws. Ensure that none are loose, missing, bent, or broken. Tighten any that are loose.
   d. Welds. Look for loose or chipped paint, rust, or cracks where parts are welded together. If you find a bad weld, notify Field Maintenance.
   e. Wiring Harness, Wires, and Connectors. Inspect for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connectors. If you find damaged wiring, notify Field Maintenance.
   f. Hoses, Lines, and Fittings. Inspect for wear, damage, and air leaks. Ensure that fittings are tight. If an air leak originates from a loose fitting, tighten it. If a component is broken or worn, correct problem if authorized by the Maintenance Allocation Chart (MAC) (WP 0105). If not authorized, notify Field Maintenance.
8. When you check for "operating condition," you look at the component to see if it is serviceable.

CLEANING AGENTS

WARNING

- Solvent cleaning compound MIL-PRF-680 may be irritating to the eyes and skin. Wear protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Use solvent cleaning compound MIL-PRF-680 in a well-ventilated area. Use respirator as needed. Accidental ingestion can cause irritation of digestive tract and respiratory tract. May cause lung and central nervous system damage. Can be fatal if swallowed. Inhalation of high/massive concentrations can cause coma or be fatal. First aid for ingestion: DO NOT induce vomiting. Seek immediate medical attention. First aid for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- MIL-PRF-680 solvent is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Improper cleaning methods and use of unauthorized cleaning liquids or solvents can injure personnel and damage equipment. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of in accordance with authorized facility procedures. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

CAUTION

- DO NOT allow cleaning compounds to come into contact with rubber, leather, vinyl, or canvas materials. Failure to comply may result in equipment damage.
- Use only those authorized cleaning solvents or agents listed in WP 0108. Failure to comply may result in equipment damage.
- DO NOT use high-pressure water or steam to clean the trailer. Use only low-pressure water and bristled brushes. Be especially careful when cleaning electrical system components including lighting. Failure to comply may result in equipment damage.

CLEANING AGENTS - Continued

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

1. Cleaning is an AFTER operation service performed by the operator to maintain the trailer in a state of readiness. Facilities and material available for cleaning may vary in different operating conditions. However, trailer must be kept as clean as possible as available cleaning equipment, materials, and tactical situations permit.
2. Allow wet brakes to dry before using trailer.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion prevention and control of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items. The term "corrosion" means the deterioration of a material or its properties due to a reaction of that material with its chemical environment. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking. Plastics, composites, and rubbers can also degrade (also considered to be corrosion based on the above definition of corrosion). Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically ultraviolet) processes. The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking. The U.S. Army has defined the following nine (9) forms of corrosion used to evaluate the deterioration of metals. These shall be used when evaluating and documenting corrosion.

UNIFORM (or general attack): Affects a large area of exposed metal surface, like rust on steel or tarnish on silver. It gradually reduces the thickness of the metal until it fails.

CREVICE: Occurs in crevices created by rubber seals, gaskets, bolt heads, lap joints, dirt or other surface deposits. It will develop anywhere moisture or other corrosive agents are trapped and unable to drain or evaporate.

SELECTIVE LEACHING: One element, usually the anodic element of an alloy, corrodes away, leaving the cathodic element. This can create holes in metal.

INTERGRANULAR: Metal deterioration caused by corrosion on the bonds between or across the grain boundaries of the metal. The metal will appear to be peeling off in sheets, flaking, or being pushed apart by layers. A particular type of intergranular corrosion is exfoliation.

PITTING: This can result from conditions similar to those for crevice corrosion. Pits can develop on various materials due to their composition. Rifle boxes are big victims of pitting.

EROSION: Results when a moving fluid (liquid or gas) flows across a metal surface, particularly when solid particles are present in the fluid. Corrosion actually occurs on the surface of the metal, but the moving fluid washes away the corrosion and exposes a new metal surface, which also corrodes.

FRETTING: Occurs as a result of small, repetitive movements (e.g., vibration) between two surfaces in contact with each other. It is usually identified by a black powder corrosion product or pits on the surface.

CORROSION PREVENTION AND CONTROL (CPC) - Continued

GALVANIC: Occurs when two different types of metal come in contact with each other, like steel bolts on aluminum, for example. This is a common problem on aircraft because of their mix of metals.

STRESS: Term used to describe corrosion cracking and corrosion fatigue. Where an item is not ready/available due to one of these forms of corrosion, it shall be recorded as a corrosion failure in the inspection record and the appropriate code (170) for corrosion shall be used when requesting/performing maintenance.

Refer to TB 43-0213 for further information about corrosion.

SF 368, Product Quality Deficiency Report (PQDR) should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

FLUID LEAKAGE

NOTE

Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of cleanup material; and leaked and spilled fluids.

It is necessary for you to know how fluid leakage affects the status of the XCK2000 and XCK2000E1 trailers. Following are types/classes of leakage you need to know to be able to determine the status of the XCK2000 and XCK2000E1 trailers. Learn these leakage definitions and remember - when in doubt, notify your supervisor. Equipment operation is allowed with minor leakage (Class I or II). Consideration must be given to fluid capacity in the item/system being checked/inspected. When in doubt, notify your supervisor.

When operating with Class I or II leaks, continue to check fluid levels as required in the PMCS.

Class III leaks should be reported immediately to your supervisor.

(1) Class I Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.

(2) Class II Leakage of fluid great enough to form drops but not enough to cause drops to drip from item being checked/inspected.

(3) Class III Leakage of fluid great enough to form drops that fall from item being checked/inspected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

INITIAL SETUP:

Materials/Parts
Rag, Wiping (WP 0108, Table 1, Item 15)

References
WP 0073

Personnel Required
(2)

Table 1. Preventive Maintenance Checks and Services (PMCS).

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
1	Before	Intervehicular Cable	Visually check for damage.	Cable is damaged.
2	Before	Gladhands	Inspect gladhands for damage, missing or worn/ cracked packing seals, and missing hardware.	Gladhands are damaged or have worn/cracked or missing packing seals, missing hardware, or restricted operation.
3	Before	Chock Blocks	Check for presence.	Blocks are not present.
4	Before	Air Lines	**NOTE** The following checks must be done with the prime mover coupled to the trailer. Connect air lines to prime mover gladhands. With prime mover engine running, check air lines and gladhands for air leaks.	Air leaks are present.
5	Before	Lights/Light-Emitting Diodes (LEDs)	**NOTE** • Check for loose plug-in connectors. Ensure there is no debris between plug and connector and then ensure that plug-in is seated. • Mission requirements, urgency, safety, and common sense should be considered when determining equipment not ready/available status of the trailer. Connect intervehicular cable from prime mover to trailer. Check lights for damage, proper operation, presence, and missing hardware. Notify Field Maintenance if there are problems in operation or damage is present.	Lights/LEDs are damaged, do not operate, or are missing hardware.
6	Before	Reflectors	Look for presence, damage, and missing hardware.	Reflectors are missing and required for mission.
7	Before	Lunette and Safety Chains	Inspect for presence, damage, and missing hardware.	Lunette is damaged, missing hardware, or missing safety chains.

Table 1. Preventive Maintenance Checks and Services (PMCS) - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
8	Before	Landing Leg Assembly	**CAUTION** • Crank operation: facing crank, clockwise retracts (raises) leg, and counterclockwise extends (lowers) leg. Failure to comply may result in equipment damage. • Ensure landing leg is fully retracted and locked up before moving trailer. Failure to comply may result in equipment damage. Engage landing leg crank handle and raise and lower leg. Check for binding, damage, and missing hardware.	Landing leg missing, will not retract or extend, binds or hard to move.
9	Before	Leveling Jacks	**CAUTION** • Crank operation: facing crank, clockwise retracts (raises) leveling jack, and counterclockwise extends (lowers) leveling jack. Failure to comply may result in equipment damage. • Ensure leveling jacks are fully retracted and stowed in tool box before moving trailer. Failure to comply may result in equipment damage. Engage leveling jack crank handle and raise and lower leveling jacks. Check for binding, damage, and missing hardware for all four leveling jacks.	Lock pins missing or the crank lock does not hold.
10	Before	Radial Tires and Wheels and Spare Tire Mount	**CAUTION** Rust near wheel lug nuts can mean low torque. Check wheels (inner/outer) and hubcaps for grease leakage. When leakage is initially found, clean off all grease and recheck after operation. If grease leakage is still evident, notify Field Maintenance. Failure to comply may result in equipment damage. **NOTE** • All wheel lug nuts have right-hand threads. • Cold radial tire pressure should be 75 psi (517 kPa) for all tires.	

Table 1. Preventive Maintenance Checks and Services (PMCS) - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			1. Inspect tires, including spare, for proper inflation, unusual tread wear, sidewall damage, cuts, foreign objects, valve stem damage, valve stem caps, and loose or missing protective dust plug on wheel hub.	Tires are not properly inflated, are damaged, or show unusual wear.
			WARNING Ensure spare tire and wheel assembly is secured in mount and securing hardware is present. Failure to secure the spare tire may result in the spare tire falling off trailer. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.	
			2. Check that spare tire is secure and securing hardware is present.	Securing hardware is unserviceable or missing.
			3. Check wheels for damaged rims and rust.	Wheel rims are damaged or rusty.
			4. Check for loose or missing wheel lug nuts. Notify Field Maintenance to ensure all nuts are present and torqued to specifications.	Wheel lug nuts are loose or missing.
			5. Notify Field Maintenance to retorque wheel lug nuts at first 100, 500, 1,000 miles (161, 805, 1,609 km), and every 6,000 miles (9,656 km) thereafter unless wheel is changed out. Then use retorque schedule.	Wheel lug nuts not properly torqued.
11	Before	Hubcaps	Inspect hubcaps for oil level, damage, loose or missing hardware, and leakage.	Hubcap is leaking oil, or oil level low, or hardware is loose or missing.
12	Before	Suspension	**WARNING** After first month or first 1,000 miles (1,609 km) of suspension repair, suspension nuts must be torqued. Failure to comply may result in personnel injury or equipment damage. Seek medical attention in event of injury.	
			Visually inspect for broken or shifted leaf springs and loose or missing hardware. Notify Field Maintenance.	Springs have shifted or are broken, and hardware is loose or missing.

Table 1. Preventive Maintenance Checks and Services (PMCS) - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
13	Before	Air Reservoir Tanks	**WARNING** Wear eye protection when opening air reservoir drain valve and avoid contact with the air stream. Failure to comply may result in personnel injury. Seek medical attention in event of injury. 1. Ensure drain valves do not leak air. 2. Inspect air tanks for damage, loose fittings, missing hardware, and any evidence of air leakage.	Drain valves leak air. Any air leaks are present or hardware is missing.
14	Before	Tool box	1. Open and close door. Ensure hinge does not bind and all mounting/securing hardware is tight and present. 2. Ensure drain holes are not blocked. 3. Ensure hydraulic jack is secure and door seal is in good condition. 4. Keep tool box clean and serviceable.	Hardware is loose or missing.
15	Before	Twistlocks	**CAUTION** Ensure there is no debris in ISO container lock slots that would prevent twistlock engagement and positive locking. Failure to comply may result in equipment damage. Ensure there is no debris in lock pocket that would interfere with lock operation. Ensure twistlocks (all) operate freely and do not bind.	Twistlocks are missing or inoperable.
16	Before	Tiedowns	**CAUTION** Deformation of any part of tiedown is not allowed. Notify Field Maintenance. Failure to comply may result in equipment damage. Check all tiedowns for damage, cracked welds, and deformation.	Damaged, deformed, and cracked welds are evident.

Table 1. Preventive Maintenance Checks and Services (PMCS) - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
17	Before	Brakes	With prime mover coupled, before start of mission, have an assistant observe if trailer brakes are locked. Slowly move prime mover forward. If tires do not turn, brakes are not working properly.	Brakes do not work.
18	During	Axles and Suspension	Listen for unusual noises, which are indications of possible problems. Be aware of conditions such as side pull, wandering, tracking of trailer, and load shift.	Unusual noises or trailer wanders, pulls to either side, or does not track.
19	During	General	Be aware of all conditions that may indicate unsafe operation or improperly secured cargo. Ensure all prime mover TM procedures, i.e., coupling load limits, and speeds for on/off road operation, are adhered to for safe operation.	Unsafe conditions are identified.
20	After	Landing Leg Assembly	Inspect landing leg assembly for proper operation and tight mounting hardware. Ensure there is no binding in operation, and the hand crank is present and can be safely stowed.	Landing leg binds or is missing hardware. Hand crank cannot be safely stowed.
21	After	Brake System	**WARNING** A hot brake drum can cause serious burns. Exercise extreme caution before attempting to touch brake drum after use. Radiated heat will be felt before brake drum is touched. Failure to comply may result in personnel injury. Seek medical attention in event of injury. Cautiously feel brake drums for abnormal heat or cold. An abnormally hot drum indicates a possible dragging or grabbing brake. An abnormally cool drum indicates improper adjustment or a defective brake.	Brake drums are abnormally hot or cold.

Table 1. Preventive Maintenance Checks and Services (PMCS) - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
22	After	Air Reservoir Tanks	**WARNING** Wear eye protection when opening air reservoir drain valve and avoid contact with the air stream. Failure to comply may result in personnel injury. Seek medical attention in event of injury. Open reservoir drain valves to remove all condensation.	System is not drained of moisture.
23	After	Trailer Cleanliness	1. Flush out axles, axle ends, suspension, landing leg, underside/topside of trailer, and tool box with clean, low-pressure water. 2. Clean and lubricate all parts as specified in WP 0073 to ensure water/debris is flushed out of system. 3. Check all electrical connections for corrosion and security. 4. Ensure all painted surfaces are touched up where necessary to prevent rust.	Flush out not accomplished when mission permits or is completed.
24	After	Tires	Check for excessive wear and damage. Remove any foreign objects from tires.	Tires are damaged or show excessive wear.
25	After	Frame and Suspension	Check for cracks or breaks.	Cracks or breaks are present.
26	Weekly	Wheels	**NOTE** Mission requirements, urgency, safety, and common sense should be considered when determining equipment not ready/available status of trailer. Check all wheels for cracks and for cracks between and around stud holes, rust streaks, and grease stains.	Cracks or leakage are evident.
27	Monthly	Frame	Perform a visual inspection of trailer for evidence of corrosion. Visually check all welds for rust and cracks. If corrosion, rust, or cracks are present notify Field Maintenance.	Cracks or breaks are present.

END OF WORK PACKAGE

CHAPTER 6

FIELD PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INSTRUCTIONS

WORK PACKAGE INDEX

Title **WP Sequence No.**

FIELD PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION..... WP 0031
FIELD PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)..... WP 0032

FIELD MAINTENANCE
FIELD PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION

GENERAL

Preventive Maintenance Checks and Services (PMCS) means systematic caring, inspecting, and servicing of equipment to keep it in good condition and to prevent breakdowns. As the provider of Field-level checks and services, your mission is to:

1. Perform your PMCS at the correct intervals as indicated. Always do your PMCS in the same order, so it gets to be a habit. Once you have had some practice, you will quickly spot anything wrong.
2. Do your SEMIANNUAL PMCS every 6 months. Pay attention to Warnings, Cautions, and Notes.
3. Do your ANNUAL PMCS every 12 months.
4. Use DA Form 2404 (Equipment Inspection and Maintenance Worksheet) or DA Form 5988-E to record any faults that you discover during the quarterly and semiannual PMCS, unless you can fix them. You DO NOT need to record faults that you fix.

PMCS PROCEDURES

1. Field PMCS Work Package (WP) lists inspections and care required to keep the trailer in good operating condition. It is set up so you can make your checks as you walk around the trailer.
2. The ITEM NO. column provides a logical sequence for PMCS to be performed and is used as a source of item number for the TM ITEM NO. column when recording PMCS results on DA Form 2404 or DA Form 5988-E.
3. The INTERVAL column tells you when to do a certain check or service.
4. The ITEM TO BE CHECKED OR SERVICED column lists the item to check or service.
5. The PROCEDURE column tells you how to do the required check or service. Carefully follow these instructions.

NOTE

The terms "ready/available" and "mission capable" refer to the same status: Equipment is on hand and ready to perform its combat missions. (See DA PAM 750-8.)

6. EQUIPMENT NOT READY/AVAILABLE IF column tells you when your trailer is nonmission capable and why the trailer cannot be used.
7. When you do your PMCS, you will always need a rag or two. Following are checks that are common to the entire trailer:
   a. Keep It Clean. Dirt, grease, oil, and debris may cover up a serious problem. Clean as you work and as needed. Use cleaning solvent (WP 0108, Table 1, Item 5) on all metal surfaces. Use detergent (WP 0108, Table 1, Item 10) and water on rubber, plastic, and painted surfaces.
   b. Rust and Corrosion. Check trailer body and frame for rust and corrosion. If any bare metal or corrosion exists, clean and apply a thin coat of light oil.
   c. Bolts, Nuts, and Screws. Ensure that none are loose, missing, bent, or broken. Tighten any that are loose.
   d. Welds. Look for loose or chipped paint, rust, or cracks where parts are welded together. If you find a bad weld, notify your supervisor.

PMCS PROCEDURES - Continued

e. Wiring Harness, Wires, and Connectors. Inspect for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connectors.

f. Hoses, Lines, and Fittings. Inspect for wear, damage, and air leaks. Ensure that fittings are tight. If an air leak originates from a loose fitting, tighten it. If a component is broken or worn, correct problem.

8. When you check for "operating condition," you look at the component to see if it is serviceable.

CLEANING AGENTS

WARNING

- Solvent cleaning compound MIL-PRF-680 may be irritating to the eyes and skin. Wear protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Use solvent cleaning compound MIL-PRF-680 in a well-ventilated area. Use respirator as needed. Accidental ingestion can cause irritation of digestive tract and respiratory tract. May cause lung and central nervous system damage. Can be fatal if swallowed. Inhalation of high/massive concentrations can cause coma or be fatal. First aid for ingestion: DO NOT induce vomiting. Seek immediate medical attention. First aid for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- MIL-PRF-680 solvent is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Improper cleaning methods and use of unauthorized cleaning liquids or solvents can injure personnel and damage equipment. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of in accordance with authorized facility procedures. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

CLEANING AGENTS - Continued

CAUTION

- DO NOT allow cleaning compounds to come into contact with rubber, leather, vinyl, or canvas materials. Failure to comply may result in equipment damage.
- Use only those authorized cleaning solvents or agents listed in WP 0108. Failure to comply may result in equipment damage.
- DO NOT use high-pressure water or steam to clean the trailer. Use only low-pressure water and bristled brushes. Be especially careful when cleaning electrical system components including lighting. Failure to comply may result in equipment damage.

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

1. Cleaning is an AFTER operation service performed by the operator to maintain the trailer in a state of readiness. Facilities and material available for cleaning may vary in different operating conditions. However, trailer must be kept as clean as possible as available cleaning equipment, materials, and tactical situations permit.
2. Allow wet brakes to dry before using trailer.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion prevention and control of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items. The term "corrosion" means the deterioration of a material or its properties due to a reaction of that material with its chemical environment. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking. Plastics, composites, and rubbers can also degrade (also considered to be corrosion based on the above definition of corrosion). Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically ultraviolet) processes. The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking. The U.S. Army has defined the following nine (9) forms of corrosion used to evaluate the deterioration of metals. These shall be used when evaluating and documenting corrosion.

UNIFORM (or general attack): Affects a large area of exposed metal surface, like rust on steel or tarnish on silver. It gradually reduces the thickness of the metal until it fails.

CREVICE: Occurs in crevices created by rubber seals, gaskets, bolt heads, lap joints, dirt or other surface deposits. It will develop anywhere moisture or other corrosive agents are trapped and unable to drain or evaporate.

SELECTIVE LEACHING: One element, usually the anodic element of an alloy, corrodes away, leaving the cathodic element. This can create holes in metal.

CORROSION PREVENTION AND CONTROL (CPC) - Continued

INTERGRANULAR: Metal deterioration caused by corrosion on the bonds between or across the grain boundaries of the metal. The metal will appear to be peeling off in sheets, flaking, or being pushed apart by layers. A particular type of intergranular corrosion is exfoliation.

PITTING: This can result from conditions similar to those for crevice corrosion. Pits can develop on various materials due to their composition. Rifle boxes are big victims of pitting.

EROSION: Results when a moving fluid (liquid or gas) flows across a metal surface, particularly when solid particles are present in the fluid. Corrosion actually occurs on the surface of the metal, but the moving fluid washes away the corrosion and exposes a new metal surface, which also corrodes.

FRETTING: Occurs as a result of small, repetitive movements (e.g., vibration) between two surfaces in contact with each other. It is usually identified by a black powder corrosion product or pits on the surface.

GALVANIC: Occurs when two different types of metal come in contact with each other, like steel bolts on aluminum, for example. This is a common problem on aircraft because of their mix of metals.

STRESS: Term used to describe corrosion cracking and corrosion fatigue. Where an item is not ready/available due to one of these forms of corrosion, it shall be recorded as a corrosion failure in the inspection record and the appropriate code (170) for corrosion shall be used when requesting/performing maintenance.

Refer to TB 43-0213 for further information about corrosion.

SF 368, Product Quality Deficiency Report (PQDR) should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

FLUID LEAKAGE

NOTE

Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of cleanup material; and leaked and spilled fluids.

It is necessary for you to know how fluid leakage affects the status of the XCK2000 and XCK2000E1 trailers. Following are types/classes of leakage you need to know to be able to determine the status of the XCK2000 and XCK2000E1 trailers. Learn these leakage definitions and remember - when in doubt, notify your supervisor. Equipment operation is allowed with minor leakage (Class I or II). Consideration must be given to fluid capacity in the item/system being checked/inspected. When in doubt, notify your supervisor.

When operating with Class I or II leaks, continue to check fluid levels as required in the PMCS.

Class III leaks should be reported immediately to your supervisor.

1. Class I Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.
2. Class II Leakage of fluid great enough to form drops but not enough to cause drops to drip from item being checked/inspected.
3. Class III Leakage of fluid great enough to form drops that fall from item being checked/inspected.

END OF WORK PACKAGE

FIELD MAINTENANCE
FIELD PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)
Torque Multiplier (WP 0109, Table 1, Item 17)
Torque Wrench, 0 to 600 lb-ft (0 to 813 N•m)
(WP 0109, Table 1, Item 19)

Materials/Parts
Grease, Silicone Insulated Electric Motor
(WP 0108, Table 1, Item 12)
Tape, Antiseizing
(WP 0108, Table 1, Item 18)

Personnel Required
(2)

References
TM 9-2610-200-14
WP 0030
WP 0033
WP 0048
WP 0056
WP 0065
WP 0073

Table 1. Preventive Maintenance Checks and Services (PMCS).

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			NOTE Perform Operator PMCS (WP 0030) prior to, or in conjunction with, Field PMCS if there is a delay between daily operation of the equipment and the Field PMCS or regular operator is not assisting/participating.	
1	First Month or First 1,000 Miles (1,609 km) of Operation	Suspension	**WARNING** • After first month or first 1,000 miles (1,609 km) of suspension repair, suspension nuts must be torqued. Refer to Field PMCS for proper torque procedure. Failure to comply may result in loss of suspension and parts. Failure to comply may result in personnel injury or equipment damage. Seek medical attention in event of injury.	

Table 1. Preventive Maintenance Checks and Services (PMCS) - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			NOTE • Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. • Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. • Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids. • Clean axle and suspension system with low-pressure water and scrub brush to allow for careful inspection.	
			1. Torque suspension nuts to the following in-service Dry torque values: 1-1/8 in. 12 UNF: 880 lb-ft (1,193 N•m) 3/4 in. 16 UNF: 300 lb-ft (407 N•m) 5/8 in. 18 UNF: 180 lb-ft (244 N•m)	Torque service requirements/schedule are not met. Nuts or bolts are damaged.
			2. New replacement installations/hardware should have Wet (oiled) fasteners. The following Wet torque values apply: 1-1/8 in. 12 UNF: 670 lb-ft (908 N•m) 3/4 in. 16 UNF: 220 lb-ft (298 N•m) 5/8 in. 18 UNF: 130 lb-ft (176 N•m)	Torque service requirements/schedule are not met. Nuts or bolts are damaged.

Table 1. Preventive Maintenance Checks and Services (PMCS) - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
2	Semi-Annually	Main Electrical Harness and All Electrical Connections	Check condition of electrical harness for wear, frayed insulation, corrosion, and that connectors are secured. Use silicone electric grease on all electrical contacts.	Harness is worn through, corroded, or unsecured. Electrical connections are loose or corroded.
3	Semi-Annually	Suspension	1. Check serviceability of suspension hardware. Check for wear and damage. 2. Torque suspension nuts to the following in-service Dry torque values: 1-1/8 in 12 UNF: 880 lb-ft (1,193 N•m) 3/4 in. 16 UNF: 300 lb-ft (407 N•m) 5/8 in. 18 UNF: 180 lb-ft (244 N•m) 3. New replacement installations/hardware should have Wet (oiled) fasteners. The following Wet torque values apply: 1-1/8 in. 12 UNF: 670 lb-ft (908 N•m) 3/4 in. 16 UNF: 220 lb-ft (298 N•m) 5/8 in. 18 UNF: 130 lb-ft (176 N•m)	Threads are worn or hardware damaged. Torque service requirements/schedule are not met. Nuts or bolts are damaged. Suspension nuts not tightened to correct torque values.
4	Semi-Annually	Springs and Attaching Parts	1. Check for missing or damaged hangers, spring seats, torque rods, and hardware. 2. Check for the following: a. One or more of the leaves in any spring assembly are broken. b. Any leaf or portion of any leaf in any spring assembly is missing or separated. c. Any broken main leaf in a spring assembly. 3. Inspect U-bolts for breakage and loose nuts. Torque loose nuts to 285 lb-ft (386 N•m) (WP 0065). Replace broken U-bolts (WP 0065).	Leaf spring attachments or hardware are missing. Broken leaf or leaves in suspension. Leaf is missing or separated. Main leaf is broken. Broken U-bolts or hardware is missing. Torque service requirements/schedule are not met. Nuts or bolts are damaged.
5	Semi-Annually	Hub Caps and Sight Gauge	Check hub caps (4 each) for leaks, damage, missing hardware, and oil level.	Class III leak is found.
6	Semi-Annually	Reflectors	If reflectors are broken or missing, replace. If screws are removed/replaced, apply antiseizing tape to all threads.	

Table 1. Preventive Maintenance Checks and Services (PMCS) - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
7	Semi-Annually	Spring Brake Chamber	**WARNING** • Disassembly of spring brake chamber is NOT authorized. When inspecting or caging spring brake chambers, DO NOT position yourself in front of, or in line with, the chamber. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury. • Before performing any work on the air brake system, chock front and rear wheels to prevent trailer movement. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury. • DO NOT use prime mover air pressure or power driven impact tools to cage the spring brake chamber. Excessive torque can cause damage to the spring pressure plate resulting in sudden release of the spring. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury. Clean and visually inspect clamp bands, castings (case), and fasteners for looseness, damage, and missing hardware or leaking air.	Hardware is loose or missing or castings are damaged or leaking air.
8	Semi-Annually	Studs and Lug Nuts	1. Check studs and lug nuts for damage. **NOTE** All lug nuts and studs have right-hand threads. 2. Torque lug nuts to 225 to 250 lb-ft (305 to 339 N•m).	Studs or lug nuts are damaged or loose. Any nuts or studs are missing.

Table 1. Preventive Maintenance Checks and Services (PMCS) - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
9	Semi-Annually	Slack Adjusters	Check for any binding; broken, worn, or loose parts; missing hardware.	Binding, wear, loose parts, missing hardware conditions are evident.
10	Semi-Annually	Axles	Check axles for cracks, damaged brackets, and damaged parts.	Axles are cracked or damaged.
11	Semi-Annually	Wheel Bearings	**WARNING** • DO NOT use air pressure or a steel bristle brush to clean cones and rollers. Use approved cleaning solvent to clean bearings. DO NOT use gasoline. DO NOT rotate bearings using compressed air as this will damage the polished surfaces. Failure to comply may result in personnel injury. Seek medical attention in event of injury. • At semiannual check/service, all brake wheel end components must be cleaned and inspected for wear and damage. Inspect all linings, springs, pins, rollers, clips, and bushings on each axle end. Ensure seals show no signs of leakage on axle, spider, or wheels. Use all components of replacement kits, and balance repairs on both axle ends. Failure to comply may result in personnel injury or equipment damage. Seek medical attention in event of injury. 1. Clean and inspect inner and outer cones and rollers. Replace if damaged or worn (WP 0056). 2. Lubricate bearings (WP 0073).	Components worn or damaged.

Table 1. Preventive Maintenance Checks and Services (PMCS) - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
12	Semi-Annually	Hub Seals	Check condition of seals for indicators of problems. When seal is removed, it should be replaced. Use correct seal installation tool to drive/set seal and never reuse a seal.	Seal is damaged, worn, or leaking.
13	Semi-Annually	Axle Spindle	Check spindle for damaged threads and surface area for rust/pitting.	Spindle is damaged.
14	Semi-Annually	Brake Drums	**WARNING** • A hot brake drum can cause serious burns. Exercise extreme caution before attempting to touch brake drum after use. Radiated heat will be felt before brake drum is touched. Failure to comply may result in personnel injury. Seek medical attention in event of injury. • The semiannual check/service is based on normal operation. Conditions identified, such as hot/cold brake drums, leakage/seepage of spindle/hub oil, brake lockup, wheel end noise/damage, and impact damage will require inspection and repair when the incident occurs, not at service interval. Failure to comply may result in personnel injury or equipment damage. Seek medical attention in event of injury. Check drums for cracking, heat discoloration, grooving, elongated bolt holes, out-of-round, or wear beyond rebore limit on drum.	Drum is cracked, severely overheated, has elongated holes, or is out-of-round.

Table 1. Preventive Maintenance Checks and Services (PMCS) - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
15	Semi-Annually	Brake System	**WARNING** DO NOT allow brake lining to wear to the point that the rivets touch the brake drum. This condition can cause brake failure. Failure to comply may result in personnel injury or equipment damage. Seek medical attention in event of injury. Check brake lining thickness, springs, anchor pins, bushings, and rollers for damage and wear.	Linings are worn to limit. Springs, anchor pins, bushings, and rollers are damaged or worn.
16	Semi-Annually	Camshaft	1. Check for wear and damage to spline, bushings, seals, and retaining brackets. Replace bushings and seals (WP 0048). 2. Lubricate camshaft (WP 0073).	Damage/wear affects operation.
17	Semi-Annually	Hubs	Clean and check hubs for wear and damage. Replace hub if damaged or worn (WP 0056).	Hub is worn or damaged.
18	Semi-Annually	Twistlock	Lubricate twistlock (WP 0073).	Twistlocks are damaged or missing.
19	Semi-Annually	Bumper Hinges	Lubricate bumper hinges (WP 0073).	Bumper hinges are damaged or missing.
20	Semi-Annually	Landing Leg	Lubricate landing leg (WP 0073).	Landing leg is damaged or missing.
21	Annual	Tires and Wheels	1. Rotate and match tires according to degree of wear. See TM 9-2610-200-14 for acceptable limits in matching tires. 2. Torque lug nuts to 225 to 250 lb-ft (305 to 339 N•m).	Damaged wheels, missing lug nuts.
22	Annual	Leveling Jacks	Lubricate leveling jacks (WP 0073).	Leveling jacks are damaged or missing.

END OF WORK PACKAGE

CHAPTER 7

OPERATOR MAINTENANCE

WORK PACKAGE INDEX

Title	WP Sequence No.
WHEEL AND TIRE ASSEMBLY REPLACEMENT	WP 0033
SPARE TIRE AND WHEEL ASSEMBLY REPLACEMENT	WP 0034
CAGING AND UNCAGING SPRING BRAKE CHAMBERS	WP 0035
ELECTRICAL CONNECTORS CLEANING	WP 0036
LANDING LEG AND LEVELING JACKS CLEANING	WP 0037
GLADHANDS CLEANING	WP 0038

OPERATOR MAINTENANCE
WHEEL AND TIRE ASSEMBLY REPLACEMENT

INITIAL SETUP:

Personnel Required
(2)

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Spare tire and wheel assembly removed (WP 0034)

WARNING

- Suitable support devices must be positioned under the axle to prevent the trailer from dropping. Suitable support devices with a minimum rating of 30,000 lb (13,608 kg) and assistance will be needed to perform this task. Failure to comply may result in personnel death, injury, or equipment damage. Seek medical attention in event of injury.
- DO NOT use the leveling jacks to lift the trailer off the ground. The leveling jacks do not provide enough stability to safely lift the trailer off the ground. The trailer may drop resulting in personnel death, injury, or equipment damage. Seek medical attention in event of injury.
- Suitable support devices must be used only on a hard, level surface to prevent shifting or dropping. The trailer wheels must be chocked. Failure to comply may result in personnel death, injury, or equipment damage. Seek medical attention in event of injury.
- Wheel and tire assembly weighs 200 lb (92 kg). Assistance will be needed to perform this procedure. Failure to comply may result in personnel injury. Seek medical attention in event of injury.

REMOVAL

NOTE

There are eight wheel and tire assemblies and they are all replaced the same way. This procedure covers one wheel and tire assembly.

1. Loosen eight lug nuts (Figure 1, Item 2) on wheel and tire assembly (Figure 1, Item 1) being removed. DO NOT remove lug nuts at this time.

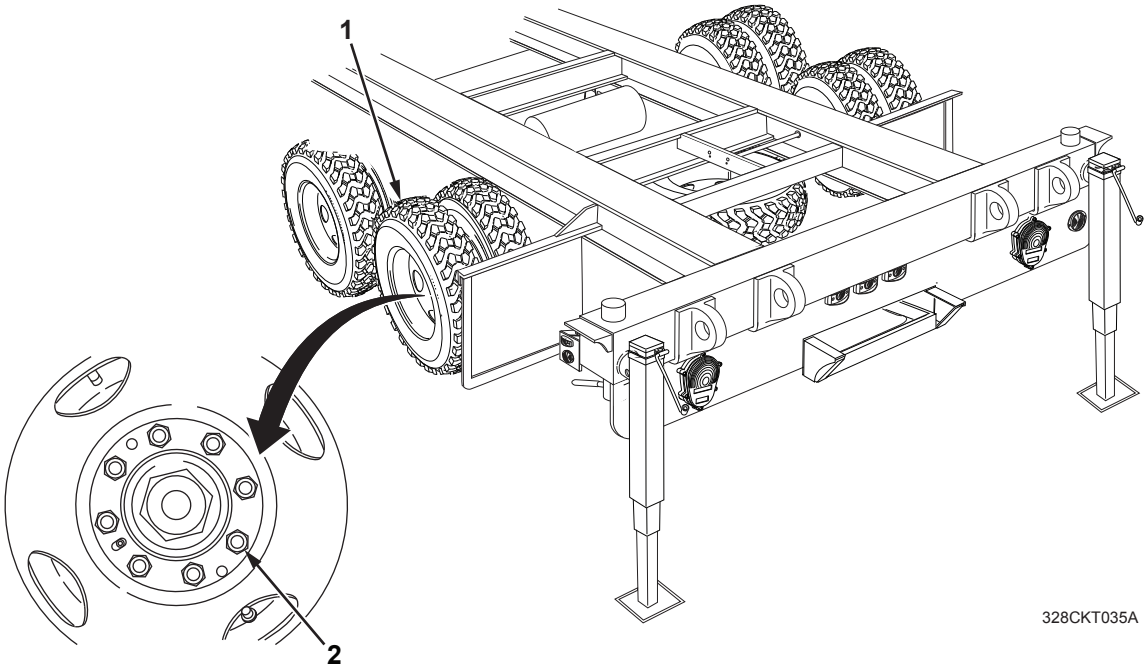

Figure 1. Lug Nuts Loosened.

REMOVAL - Continued

2. Install suitable lifting device (Figure 2, Item 4) under axle (Figure 2, Item 3) and raise axle (Figure 2, Item 3) until outer wheel and tire assembly (Figure 2, Item 1) and inner wheel and tire assembly (Figure 2, Item 5) clear the ground.
3. Remove eight lug nuts (Figure 2, Item 7), ring (Figure 2, Item 8), and wheel and tire assembly (Figure 2, Item 1) from hub (Figure 2, Item 6).
4. Inspect lug nuts (Figure 2, Item 7), ring (Figure 2, Item 8), hub (Figure 2, Item 6), and hub studs (Figure 2, Item 2) for damage. Report any damage to Field Maintenance.

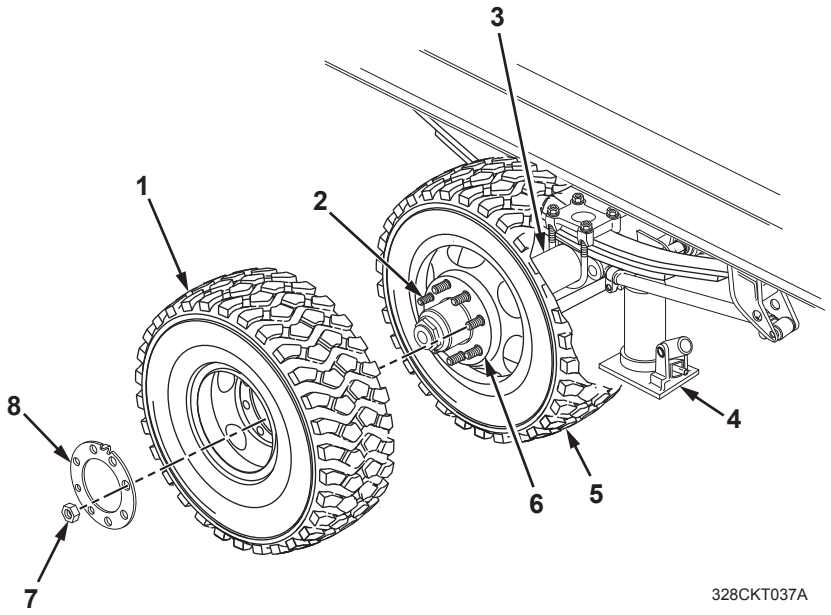

Figure 2. Wheel and Tire Assembly Removal.

END OF TASK

INSTALLATION

NOTE

There are eight wheel and tire assemblies and they are all replaced the same way. This procedure covers one wheel and tire assembly.

1. Install and position new wheel and tire assembly (Figure 3, Item 1) on hub studs (Figure 3, Item 2) with inner and outer wheel valve stems (Figure 3, Item 7) 180 degrees apart on hub (Figure 3, Item 6).
2. Install ring (Figure 3, Item 9) and eight lug nuts (Figure 3, Item 8) and tighten.
3. Lower outer wheel and tire assembly (Figure 3, Item 1) and inner wheel and tire assembly (Figure 3, Item 5).
4. Remove suitable lifting device (Figure 3, Item 4) from under axle (Figure 3, Item 3).
5. Notify Field Maintenance to apply torque of 225 to 250 lb-ft (305 to 339 N•m) to lug nuts.

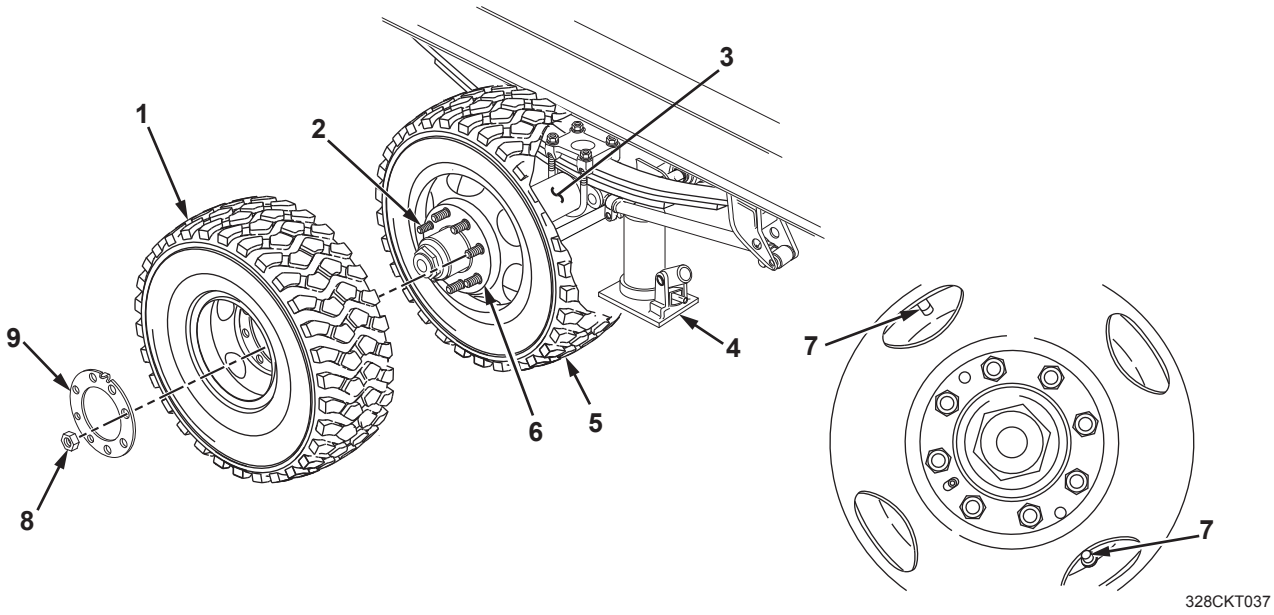

Figure 3. Wheel and Tire Assembly Installation.

END OF TASK

FOLLOW-ON TASK

Store spare tire and wheel assembly under trailer (WP 0034).

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
SPARE TIRE AND WHEEL ASSEMBLY REPLACEMENT

INITIAL SETUP:

Personnel Required
(2)

Equipment Condition
Wheels chocked (WP 0005)
Landing leg down (WP 0005)

WARNING

Spare tire and wheel assembly weighs 200 lb (92 kg). Assistance will be needed to perform this procedure. Failure to comply may result in personnel injury. Seek medical attention in event of injury.

REMOVAL

1. Remove two lug nuts (Figure 1, Item 1) from spare tire and wheel assembly (Figure 1, Item 2).
2. Attach handle (Figure 2, Item 2) on ratchet (Figure 2, Item 3). Ensure the word DOWN, on the ratchet (Figure 2, Item 3) is facing out.
3. Install handle (Figure 2, Item 2) with ratchet (Figure 2, Item 3) in socket (Figure 2, Item 1).
4. Rotate ratchet (Figure 2, Item 3) counterclockwise lowering spare tire and wheel assembly (Figure 2, Item 4).
5. Remove spare tire and wheel assembly (Figure 2, Item 4) from spare tire cable (Figure 2, Item 5).

END OF TASK

INSTALLATION

1. Position spare tire and wheel assembly (Figure 2, Item 4) under spare tire carrier (Figure 2, Item 6).
2. Attach spare tire and wheel assembly (Figure 2, Item 4) on spare tire cable (Figure 2, Item 5).
3. Attach handle (Figure 2, Item 2) on ratchet (Figure 2, Item 3). Ensure the word UP, on the ratchet (Figure 2, Item 3) is facing out.
4. Attach handle (Figure 2, Item 2) with ratchet (Figure 2, Item 3) in socket (Figure 2, Item 1).
5. Rotate ratchet (Figure 2, Item 3) clockwise raising spare tire and wheel assembly (Figure 2, Item 4) to spare tire carrier (Figure 2, Item 6).
6. Install two lug nuts (Figure 1, Item 1) on spare tire and wheel assembly (Figure 1, Item 2). Tighten lug nuts (Figure 1, Item 1).

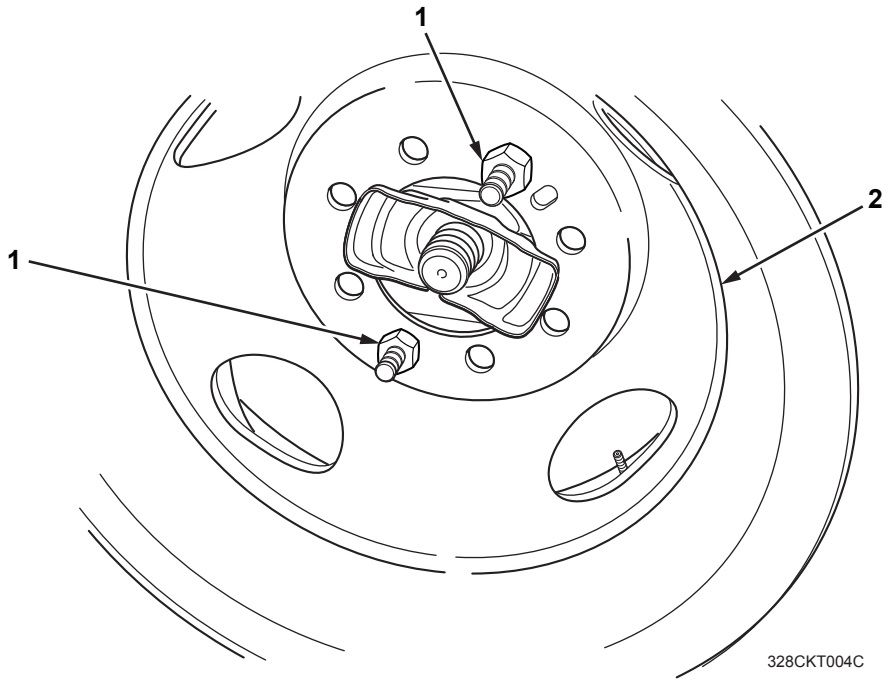

Figure 1. Spare Tire Lug Nuts Replacement.

INSTALLATION - Continued

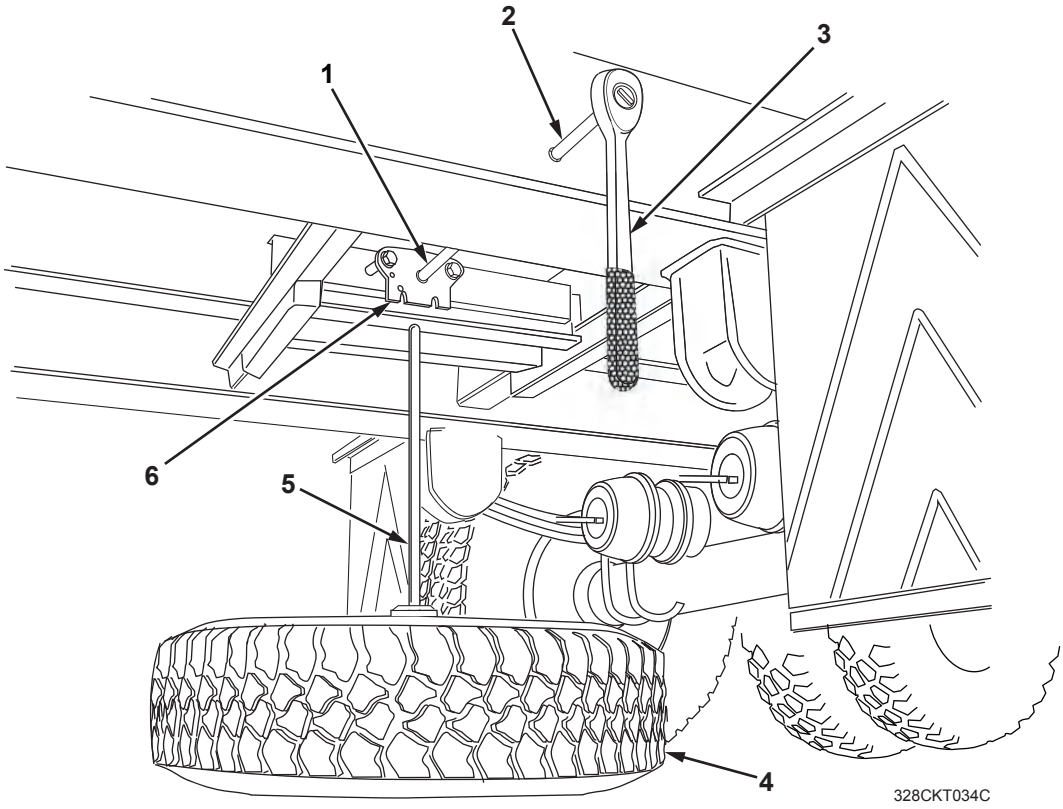

Figure 2. Spare Tire and Wheel Replacement.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
CAGING AND UNCAGING SPRING BRAKE CHAMBERS

INITIAL SETUP:

References
WP 0005

GENERAL SAFETY PRECAUTIONS

WARNING

- Caging the spring brake chambers is an emergency procedure. This is to be used only to move the trailer off the traveled portion of the road when a brake line or other part fails causing loss of air brake system air pressure. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.
- Spring in spring brake chamber is under 2,500 lbF (1,134 kgF) of force. When inspecting or caging spring brake chambers, DO NOT position yourself in front of, or in line with, the chamber. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Never strike any part of the spring brake with a hammer or any other heavy object. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

CAGING AND UNCAGING SPRING BRAKE CHAMBERS

Caging Spring Brake Chambers

NOTE

In the event of air system pressure loss, fail-safe units on every axle will automatically apply brakes. If trailer must be moved and there is not enough air system pressure to compress spring in spring brake chambers to release brakes, you will have to do this manually.

1. Chock trailer wheels (WP 0005).
2. Remove cap (Figure 1, Item 5) from access hole (Figure 1, Item 1).

NOTE

Spring brake chamber release studs may be stored in toolbox.

3. Remove nut (Figure 1, Item 4), flat washer (Figure 1, Item 3), and release stud (Figure 1, Item 2) from spring brake chamber (Figure 1, Item 6).
4. Insert tab end of release stud (Figure 1, Item 2) in access hole (Figure 1, Item 1) and turn release stud (Figure 1, Item 2) 1/4 turn clockwise.
5. Install flat washer (Figure 1, Item 3) and nut (Figure 1, Item 4) on release stud (Figure 1, Item 2). Tighten nut (Figure 1, Item 4) until spring is fully caged.

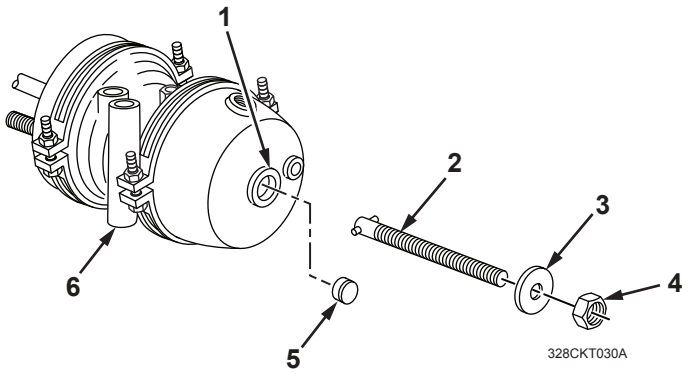

Figure 1. Spring Brake Chamber Caged.

6. Repeat Steps 2 through 5 for remaining spring brake chambers.
7. Remove and store chock blocks (WP 0005).
8. Move trailer off traveled portion of road.
9. Chock trailer wheels (WP 0005).
10. Notify Field Maintenance.

Uncaging Spring Brake Chambers

1. Remove nut (Figure 2, Item 4) and flat washer (Figure 2, Item 3) from release stud (Figure 2, Item 2).
2. Remove release stud (Figure 2, Item 2) from access hole (Figure 2, Item 1).

CAGING AND UNCAGING SPRING BRAKE CHAMBERS - Continued

NOTE

Spring brake chamber release studs may be stored in toolbox.

3. Install release stud (Figure 2, Item 2) on spring brake chamber (Figure 2, Item 6) with flat washer (Figure 2, Item 3) and nut (Figure 2, Item 4).
4. Install cap (Figure 2, Item 5) on access hole (Figure 2, Item 1).
5. Repeat Steps 1 through 4 for remaining spring brake chambers.

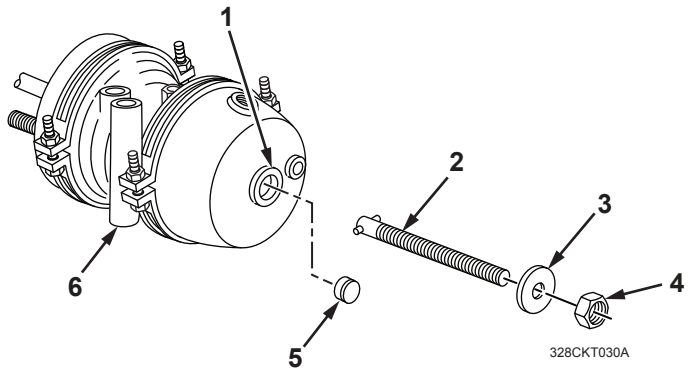

Figure 2. Spring Brake Chamber Uncaged.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
ELECTRICAL CONNECTORS CLEANING

INITIAL SETUP:

Materials/Parts
- Brush, Scrub (WP 0108, Table 1, Item 4)
- Detergent (WP 0108, Table 1, Item 10)
- Grease, Silicone Insulated Electric Motor (WP 0108, Table 1, Item 12)
- Rag, Wiping (WP 0108, Table 1, Item 15)

Equipment Condition
- Wheels chocked (WP 0005)

Equipment Condition (cont.)
- Landing leg down (WP 0005)
- Trailer disconnected from prime mover (WP 0005)

WARNING

Disconnect electrical power from trailer before performing any cleaning or maintenance of electrical system to avoid being shocked. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

CLEANING

1. Use a clean rag to remove any buildup of grease and dirt on electrical connectors (Figure 1, Item 1).
2. Use a brush, detergent, and water to clean metal surfaces.
3. Allow to dry.
4. Coat electrical connector pins (Figure 1, Item 2) with thin film of silicone electric grease.

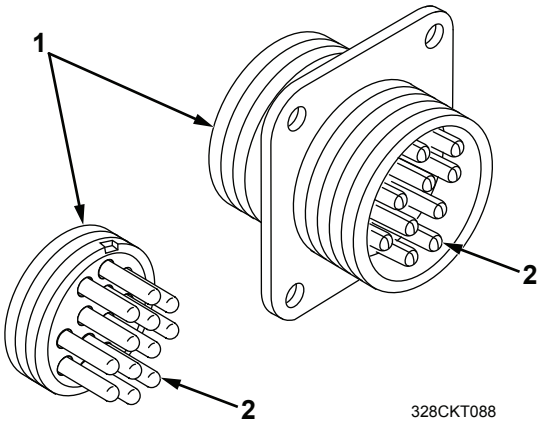

Figure 1. Electrical Connectors Cleaning.

END OF TASK

FOLLOW-ON TASKS

1. Connect trailer to prime mover (WP 0005).
2. Connect power source and test clearance lights for proper operation (WP 0005).

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
LANDING LEG AND LEVELING JACKS CLEANING

INITIAL SETUP:

Materials/Parts
Brush, Scrub (WP 0108, Table 1, Item 4)
Detergent (WP 0108, Table 1, Item 10)
Rag, Wiping (WP 0108, Table 1, Item 15)

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover (WP 0005)

CLEANING

NOTE

There are four leveling jacks which are stored in the tool box. When installed, there are two leveling jacks in front and two in back of trailer.

1. Use clean rag to remove any buildup of grease and dirt from landing leg (Figure 1, Item 2) and leveling jacks (Figure 1, Item 1).
2. Use brush, water, and detergent to thoroughly clean landing leg (Figure 1, Item 2) and leveling jacks (Figure 1, Item 1).
3. Allow to dry.

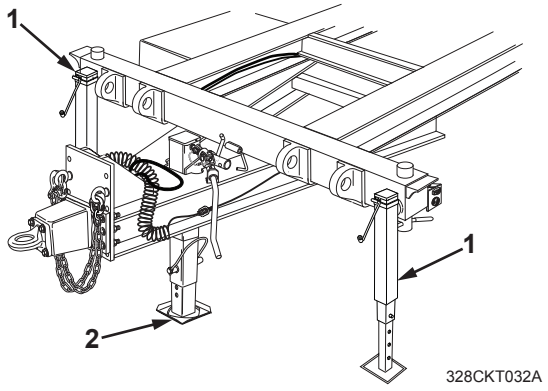

Figure 1. Landing Leg and Leveling Jacks Cleaning.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
GLADHANDS CLEANING

INITIAL SETUP:

Materials/Parts
Detergent (WP 0108, Table 1, Item 10)
Rag, Wiping (WP 0108, Table 1, Item 15)

References
WP 0072

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover (WP 0005)

CLEANING

1. Remove any buildup of grease and dirt.
2. Clean packing on gladhands (Figure 1, Item 1) with a clean rag, water, and detergent.

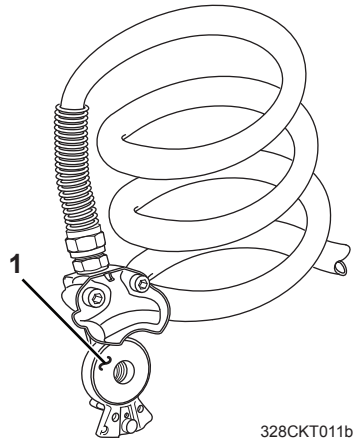

Figure 1. Gladhands Cleaning.

END OF TASK

FOLLOW-ON TASKS

1. Connect trailer to prime mover (WP 0005).
2. Connect service air hose and emergency air hose to prime mover (WP 0005).
3. Inspect for air leaks (WP 0072).

END OF TASK

END OF WORK PACKAGE

CHAPTER 8

FIELD MAINTENANCE

WORK PACKAGE INDEX

Title	WP Sequence No.
SERVICE UPON RECEIPT	WP 0039
REAR COMPOSITE LIGHTS ASSEMBLY REPAIR (XCK2000)	WP 0040
REAR LIGHT-EMITTING DIODE (LED) LIGHT REPLACEMENT (XCK2000E1)	WP 0041
CLEARANCE LIGHTS ASSEMBLY REPLACEMENT	WP 0042
ELECTRICAL SYSTEM TESTING	WP 0043
INTERVEHICULAR CABLE REPAIR	WP 0044
WIRING HARNESS AND CABLE REPAIR	WP 0045
AXLE REPLACEMENT	WP 0046
SERVICE BRAKES MAINTENANCE	WP 0047
CAMSHAFT AND BEARINGS REPLACEMENT	WP 0048
SLACK ADJUSTERS REPLACEMENT	WP 0049
SPRING BRAKE CHAMBER REPLACEMENT	WP 0050
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WHEEL AND TIRE ASSEMBLY MAINTENANCE	WP 0057
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SAFETY CHAINS REPLACEMENT	WP 0062
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REFLECTORS REPLACEMENT	WP 0066
TOOL BOX REPLACEMENT	WP 0067
ELECTRICAL COVER AND CABLE CLAMP REPLACEMENT	WP 0068
REAR BUMPER CLAMP REPLACEMENT (XCK2000E1)	WP 0069
DATA PLATES AND DECAL REPLACEMENT	WP 0070
PREPARATION FOR STORAGE OR SHIPMENT	WP 0071
GENERAL MAINTENANCE INSTRUCTIONS	WP 0072
LUBRICATION INSTRUCTIONS	WP 0073
TORQUE LIMITS	WP 0074
WIRING DIAGRAMS	WP 0075

FIELD MAINTENANCE
SERVICE UPON RECEIPT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Cleaning Solvent, Type II
(WP 0108, Table 1, Item 5)
Rag, Wiping (WP 0108, Table 1, Item 15)

References
DA Form 2407

References (cont.)
DD Form 314
DD Form 1397
DA PAM 750-8
WP 0030
WP 0032
WP 0073
WP 0106

GENERAL

When a new, used, or reconditioned trailer is first received, determine whether it has been properly prepared for service and is in condition to perform its mission. Follow the inspection instructions and servicing instructions specified in this Work Package (WP).

INSPECTION INSTRUCTIONS

1. Read and follow all instructions on DD Form 1397 attached to conspicuous part of trailer.
2. Remove all straps, plywood, tape, seals, and wrappings.

WARNING

- Solvent cleaning compound MIL-PRF-680 may be irritating to the eyes and skin. Wear protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Use solvent cleaning compound MIL-PRF-680 in a well-ventilated area. Use respirator as needed. Accidental ingestion can cause irritation of digestive tract and respiratory tract. May cause lung and central nervous system damage. Can be fatal if swallowed. Inhalation of high/massive concentrations can cause coma or be fatal. First aid for ingestion: DO NOT induce vomiting. Seek immediate medical attention. First aid for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- MIL-PRF-680 solvent is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Improper cleaning methods and use of unauthorized cleaning liquids or solvents can injure personnel and damage equipment. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of in accordance with authorized facility procedures. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

3. Remove rust-preventive compound from coated exterior parts of trailer using solvent cleaning compound and rags.
4. Inspect trailer for damage incurred during shipment. Also check to see if equipment has been modified.

INSPECTION INSTRUCTIONS - Continued

5. Check equipment against packing list to ensure that shipment is complete. Report any discrepancies in accordance with instructions in DA PAM 750-8.
6. Inventory Basic Issue Items (BII) (WP 0106).

END OF TASK

SERVICING INSTRUCTIONS

1. Perform all Operator/Field Preventive Maintenance Checks and Services (PMCS) (WP 0030 and WP 0032). Schedule next PMCS on DD Form 314.
2. Lubricate all lubrication points as described in WP 0073 regardless of interval.
3. Report any problems on DA Form 2407.
4. Perform a break-in road test of 25 miles (40 km) at a maximum speed of 50 mph (80 kph).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
REAR COMPOSITE LIGHTS ASSEMBLY REPAIR (XCK2000)

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Lockwasher Qty: 2 (WP 0077, Figure 1, Item 4)
O-ring (WP 0077, Figure 1, Item 3)
Tag, Marker (WP 0108, Table 1, Item 17)

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)

WARNING

Disconnect electrical power from trailer before performing any cleaning or maintenance of electrical system to avoid being shocked. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

NOTE

There are two rear composite light assemblies which are removed and installed the same way. The following procedures cover one rear composite light assembly.

REMOVAL

1. Tag and disconnect four electrical connectors (Figure 1, Item 5).
2. Remove two screws (Figure 1, Item 4), two lockwashers (Figure 1, Item 3), and rear composite light (Figure 1, Item 1) from trailer frame (Figure 1, Item 2). Discard lockwashers (Figure 1, Item 3).

END OF TASK

DISASSEMBLY

1. Loosen six captive screws (Figure 1, Item 12) and remove lens (Figure 1, Item 11).

NOTE

DO NOT remove O-ring unless it is damaged.

2. Remove O-ring (Figure 1, Item 10) from lens (Figure 1, Item 11), if damaged. Discard O-ring (Figure 1, Item 10).

NOTE

Only remove lamps or lights that need to be replaced.

3. Remove two lamps (Figure 1, Items 8 and 9) and two lights (Figure 1, Items 6 and 7).

END OF TASK

ASSEMBLY

NOTE

Only install lights or lamps that were removed.

1. Install two lights (Figure 1, Items 6 and 7) and two lamps (Figure 1, Items 8 and 9).

NOTE

Step 2 only applies if O-ring was removed during disassembly.

2. Install new O-ring (Figure 1, Item 10) on lens (Figure 1, Item 11).
3. Install lens (Figure 1, Item 11) and tighten six captive screws (Figure 1, Item 12).

END OF TASK

INSTALLATION

1. Install rear composite light (Figure 1, Item 1), two new lockwashers (Figure 1, Item 3), and two screws (Figure 1, Item 4) on trailer frame (Figure 1, Item 2).
2. Connect four electrical connectors (Figure 1, Item 5). Remove tags from electrical connectors (Figure 1, Item 5).

INSTALLATION - Continued

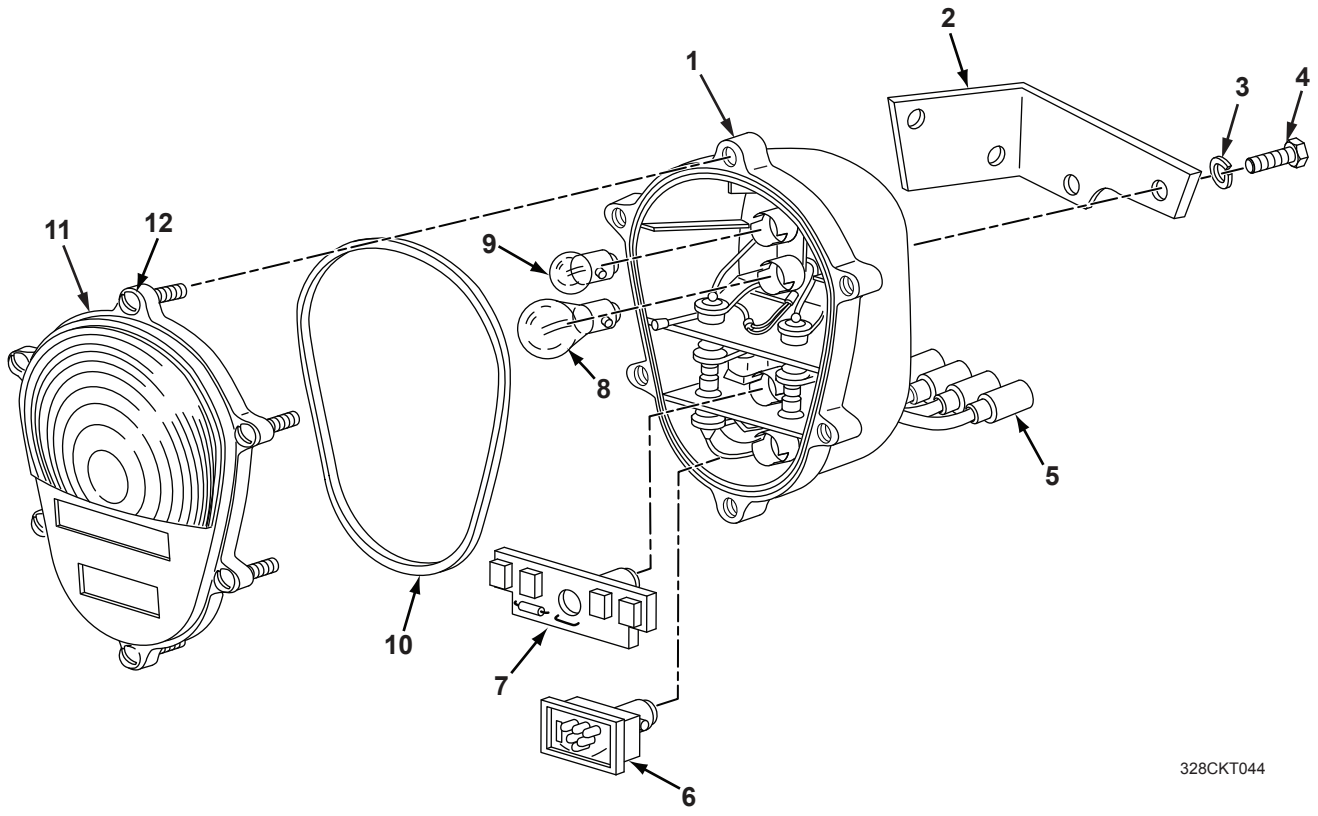


Figure 1. Rear Composite Light Repair.

END OF TASK

FOLLOW-ON TASKS

1. Connect trailer to prime mover (WP 0005).
2. Test rear composite lights for proper operation (WP 0005).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
REAR LIGHT-EMITTING DIODE (LED) LIGHT REPLACEMENT (XCK2000E1)

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Locknut Qty: 5 (WP 0077, Figure 1, Item 13)
Tag, Marker (WP 0108, Table 1, Item 17)

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)
Rear electrical covers removed (WP 0068)

WARNING

Disconnect electrical power from trailer before performing any cleaning or maintenance of electrical system to avoid being shocked. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

NOTE

There are two rear LED lights which are removed and installed the same way.
The following procedures cover one rear LED light.

REMOVAL

1. Tag and disconnect five electrical connectors (Figure 1, Item 1).
2. Remove five locknuts (Figure 1, Item 4), screws (Figure 1, Item 3), and rear LED light (Figure 1, Item 2). Discard locknuts (Figure 1, Item 4).

END OF TASK

INSTALLATION

1. Install rear LED light (Figure 1, Item 2), five screws (Figure 1, Item 3), and new locknuts (Figure 1, Item 4).
2. Connect five electrical connectors (Figure 1, Item 1). Remove tags from electrical connectors.

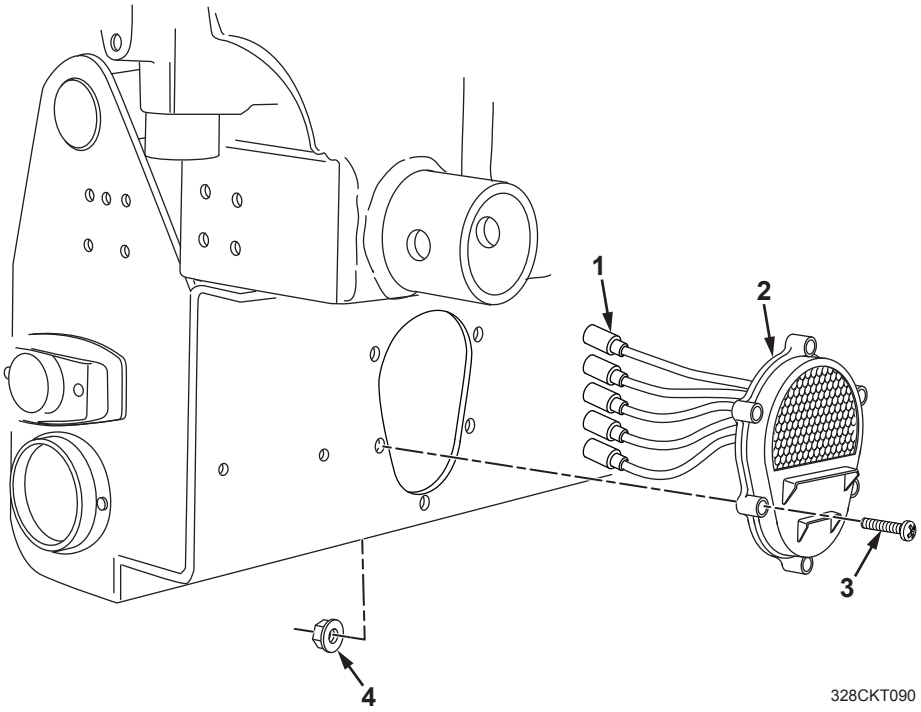


Figure 1. Rear LED Light Replacement.

END OF TASK

FOLLOW-ON TASKS

1. Install rear electrical covers (WP 0068).
2. Connect trailer to prime mover (WP 0005).
3. Test rear composite lights for proper operation (WP 0005).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
CLEARANCE LIGHTS ASSEMBLY REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Tag, Marker (WP 0108, Table 1, Item 17)

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)

WARNING

Disconnect electrical power from trailer before performing any cleaning or maintenance of electrical system to avoid being shocked. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

NOTE

There are two amber-colored clearance lights in the front of the trailer and five red-colored clearance lights in the rear of the trailer. All the clearance lights are removed and installed the same way. The following procedures cover one clearance light.

REMOVAL

NOTE

- Steps 1 through 3 apply only to the XCK2000 trailer.
- The clearance lights on the XCK2000 trailer have incandescent lamps.

1. Remove two screws (Figure 1, Item 5) and lens cover (Figure 1, Item 4).
2. Remove four screws (Figure 1, Item 3), lens housing (Figure 1, Item 2), and lamp (Figure 1, Item 6).
3. Tag and disconnect electrical connector (Figure 1, Item 1).

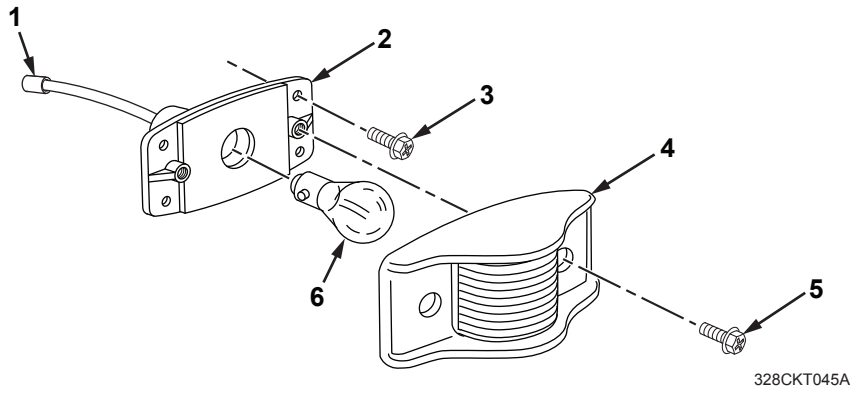


Figure 1. Clearance Light Removal (XCK2000).

NOTE

- Steps 4 through 6 apply only to the XCK2000E1 trailer.
- The XC2000E1 trailer clearance lights are Light-Emitting Diodes (LED).

4. Remove two screws (Figure 2, Item 4) and lens cover (Figure 2, Item 3).
5. Remove four screws (Figure 2, Item 2) and LED (Figure 2, Item 5).
6. Tag and disconnect electrical connector (Figure 2, Item 1).

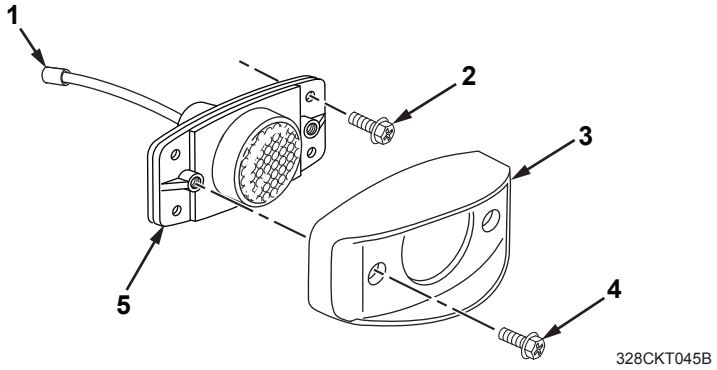


Figure 2. Clearance LED Removal (XCK2000E1).

END OF TASK

INSTALLATION

NOTE

- Steps 1 through 3 apply only to the XCK2000 trailer.
- The clearance lights on the XCK2000 trailer have incandescent lamps.

1. Connect electrical connector (Figure 3, Item 1) and discard tag.
2. Install lamp (Figure 3, Item 6), lens housing (Figure 3, Item 2), and four screws (Figure 3, Item 3).
3. Install lens cover (Figure 3, Item 4) and two screws (Figure 3, Item 5).

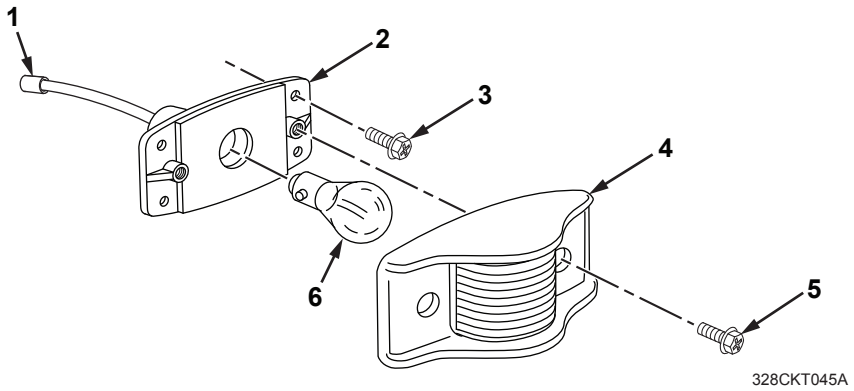


Figure 3. Clearance Light Installation (XCK2000).

NOTE

- Steps 4 through 6 apply only to the XCK2000E1 trailer.
- The XC2000E1 trailer clearance lights are Light-Emitting Diodes (LED).

4. Connect electrical connector (Figure 4, Item 1) and discard tag.
5. Install LED (Figure 4, Item 5) and four screws (Figure 4, Item 2).
6. Install lens cover (Figure 4, Item 3) and two screws (Figure 4, Item 4).

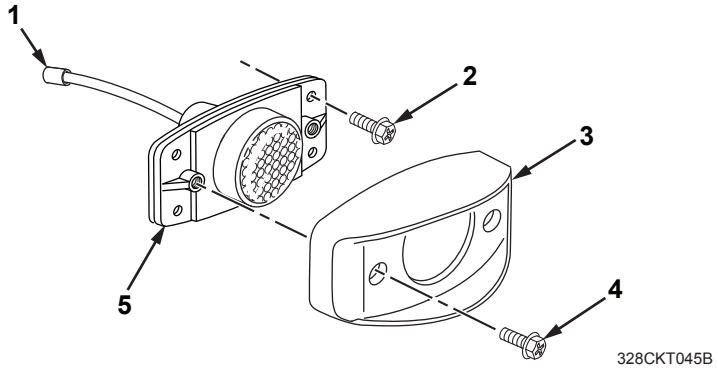


Figure 4. Clearance LED Installation (XCK2000E1).

END OF TASK

FOLLOW-ON TASKS

1. Connect trailer to prime mover (WP 0005).
2. Test clearance lights for proper operation (WP 0005).
3. Raise landing leg (WP 0005).
4. Stow chocks in tool box.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL SYSTEM TESTING

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)
Multimeter
(WP 0109, Table 1, Item 5)

Materials/Parts
Tag, Marker (WP 0108, Table 1, Item 17)

References
WP 0040

References (cont.)
WP 0042
WP 0044
WP 0045
WP 0075

Equipment Condition
Wheels chocked (WP 0005)
Landing leg down (WP 0005)
Trailer properly connected to prime mover
(WP 0005)

CHECK FOR GROUNDS

1. Disconnect all wiring connectors at lights. Ensure identification markers are present on individual wires before disconnecting. If not, tag wires.

NOTE

Check for continuity on grounds, using multimeter on low ohms scale.

2. Check for continuity between wiring harness connector pin D and chassis. If circuit is open, repair ground lead on wiring harness (WP 0045).
3. Check for grounds between wiring harness connector pins A, B, C, E, F, and J, and pin D (ground). Refer to wiring diagram, (WP 0075). There should be an open circuit between the connector pins. If there is continuity between any connector pin as specified, that circuit is grounded and the wiring harness must be repaired or replaced.

NOTE

The Light-Emitting Diode (LED) rear lights on the XCK2000E1 Trailer do not have removable lamps.

4. Remove all lamps from lights (WP 0040 and WP 0042).
5. Check for grounds from each light lead wire and chassis (ground). There should be an open circuit between each lead wire and the chassis. If there is continuity on any lead wire, the wire is grounded and must be repaired or light replaced.

END OF TASK

CHECK CHASSIS WIRING HARNESS CONTINUITY

NOTE

LED rear lights on the XCK2000E1 Trailer do not have removable lamps.

1. Install all lamps in lights (WP 0040 and WP 0042).
2. Check for continuity between each light lead wire and the chassis. If there is an open circuit, first check lamp. If lamp is defective replace it. If there is still an open circuit, repair lead wire (WP 0045) or replace light (WP 0040 and WP 0042).
3. Connect all wire connectors at lights.
4. Check for continuity between wiring harness connector pins A, B, C, E, F, and J, and pin D (ground). Each circuit should indicate continuity. If not, there is a broken wire and wiring must be repaired or replaced.

END OF TASK

CHECK INTERVEHICULAR CABLE CONTINUITY

Check for continuity between individual connector pins and socket on opposite ends of cable at terminals A, B, C, D, E, F, and J. Refer to wiring diagram (WP 0075). If any circuit is open, replace intervehicular cable (WP 0044).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
INTERVEHICULAR CABLE REPAIR

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Lockwasher Qty: 2 (WP 0079, Figure 3, Item 2)
Tag, Marker (WP 0108, Table 1, Item 17)

References
WP 0045

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)
Electrical covers removed (WP 0068)

WARNING

Disconnect electrical power from trailer before performing any cleaning or maintenance of electrical system to avoid being shocked. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

REMOVAL

1. Disconnect six harness connectors (Figure 1, Item 6) at chassis wiring harness (Figure 1, Item 5).
2. Remove nut (Figure 1, Item 9) and lockwasher (Figure 1, Item 8) releasing ground lead (Figure 1, Item 7) at front of trailer. Discard lockwasher (Figure 1, Item 8).
3. Remove nut (Figure 1, Item 3), lockwasher (Figure 1, Item 2), clamp (Figure 1, Item 1), and intervehicular cable (Figure 1, Item 4). Discard lockwasher (Figure 1, Item 2).

END OF TASK

REPAIR

If intervehicular cable is damaged refer to Wiring Harness and Cable Repair (WP 0045).

END OF TASK

INSTALLATION

NOTE

To make installation easier, tape connector bundles to main harness if desired.

1. Install clamp (Figure 1, Item 1) on trailer frame with new lockwasher (Figure 1, Item 2) and nut (Figure 1, Item 3).
2. Install intervehicular cable (Figure 1, Item 4) through clamp (Figure 1, Item 1).
3. Install ground lead (Figure 1, Item 7) with new lockwasher (Figure 1, Item 8) and nut (Figure 1, Item 9).
4. Connect six harness connectors (Figure 1, Item 6) at chassis wiring harness (Figure 1, Item 5).
5. Connect trailer to prime mover and test lights (WP 0005).

INSTALLATION - Continued

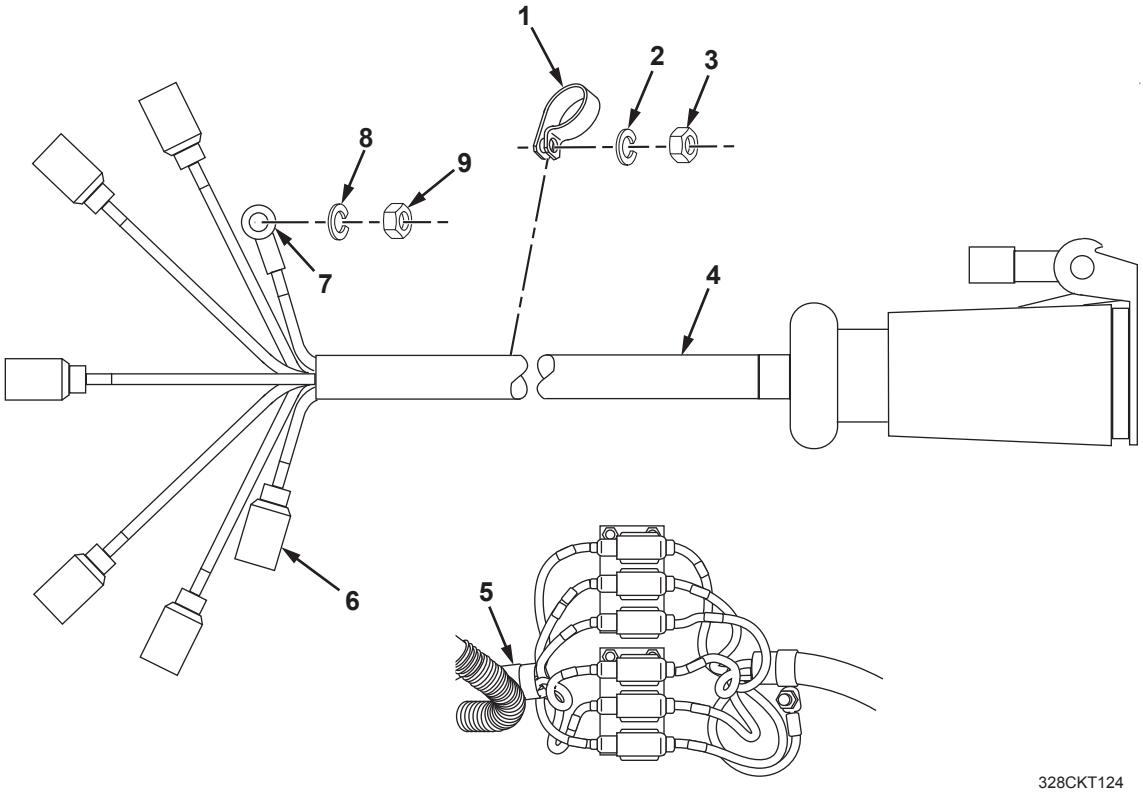


Figure 1. Intervehicular Cable Removal and Installation.

END OF TASK

FOLLOW-ON TASK

Install electrical covers (WP 0068).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
WIRING HARNESS AND CABLE REPAIR

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0109, Table 1, Item 15)
- Tool Kit, Electrical (WP 0109, Table 1, Item 14)
- Die Set, Metal Stamping (WP 0109, Table 1, Item 1)
- Soldering Iron (WP 0109, Table 1, Item 13)

Materials/Parts
- Brush, Scrub (WP 0108, Table 1, Item 4)
- Cleaning Solvent, Type II (WP 0108, Table 1, Item 5)
- Detergent (WP 0108, Table 1, Item 10)
- Grease, Silicone Insulated Electric Motor (WP 0108, Table 1, Item 12)
- Lockwasher Qty: 10 (WP 0080, Figure 4, Item 6)
- Rag, Wiping (WP 0108, Table 1, Item 15)

Materials/Parts (cont.)
- Solder (WP 0108, Table 1, Item 16)
- Tag, Marker (WP 0108, Table 1, Item 17)
- Tape, Electrical (WP 0108, Table 1, Item 20)
- Tubing: Heat Shrinkable (WP 0108, Table 1, Item 21)

References
- WP 0075

Equipment Condition
- Wheels chocked (WP 0005)
- Landing leg down (WP 0005)
- Trailer disconnected from prime mover (WP 0005)
- Electrical covers removed (WP 0068)

WARNING

Disconnect electrical power from trailer before performing any cleaning or maintenance of electrical system to avoid being shocked. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

NOTE

- The trailer is equipped with an intervehicular cable, which has a 12-pin, 24-volt receptacle, and a chassis wiring harness.
- The trailer is equipped with two taillights, one on each side. The taillights include turn signals, stop light, and blackout lights.
- The trailer is also equipped with clearance lights. Amber clearance lights are located on each front corner of the trailer sides. Red clearance lights are located on each side at the rear of the trailer. Three red clearance lights are also located at the center of the rear of the trailer.
- For locating any untagged, disconnected wires, refer to the wiring diagram (WP 0075).

REMOVAL

1. Disconnect six harness connectors (Figure 1, Item 5) at intervehicular wiring harness (Figure 1, Item 10).
2. Remove nut (Figure 1, Item 3) and lockwasher (Figure 1, Item 2) releasing ground lead (Figure 1, Item 6) at front of trailer. Discard lockwasher (Figure 1, Item 2).
3. Disconnect two front clearance light harness connectors (Figure 1, Item 4).
4. Disconnect five rear clearance light harness connectors (Figure 1, Item 8).
5. Disconnect eight rear light harness connectors (Figure 1, Item 9).
6. Remove nut (Figure 1, Item 3) and lockwasher (Figure 1, Item 2) releasing ground lead (Figure 1, Item 6) at rear of trailer. Discard lockwasher (Figure 1, Item 2).
7. Remove eight nuts (Figure 1, Item 3), lockwashers (Figure 1, Item 2), clamps (Figure 1, Item 1), and chassis wiring harness (Figure 1, Item 7). Discard lockwashers (Figure 1, Item 2).

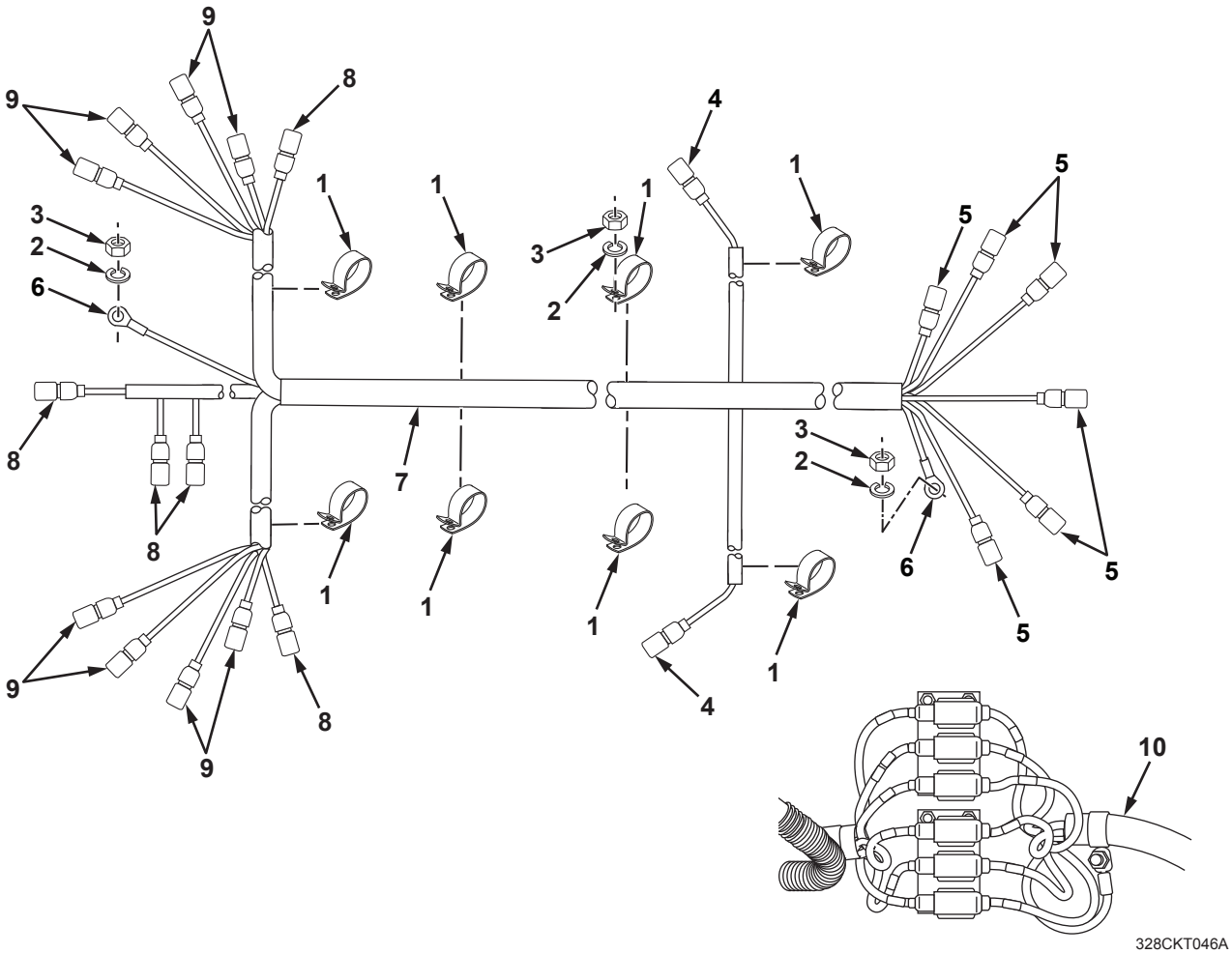


Figure 1. Chassis Wiring Harness Removal.

END OF TASK

CLEANING

1. Use a clean rag to remove any buildup of grease and dirt on electrical connectors (Figure 2, Item 1).
2. Use a brush, detergent, and water to clean metal surfaces.
3. Allow to dry.
4. Coat electrical connector pins (Figure 2, Item 2) with thin film of silicone electric grease.

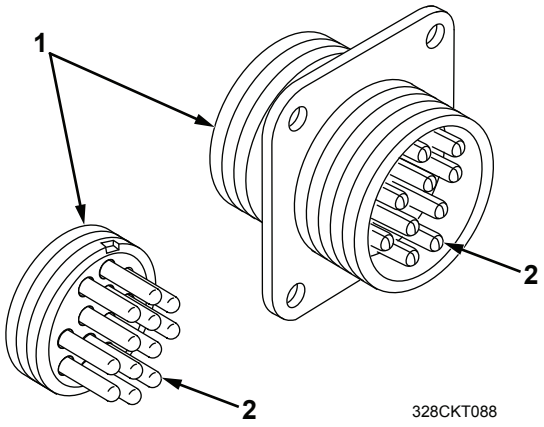


Figure 2. Electrical Connectors Cleaning.

END OF TASK

SOLDERING

CAUTION

Use low wattage soldering gun when soldering electrical wires, connectors, terminal lugs, and receptacles. High wattage soldering guns may damage parts by overheating. Failure to comply may result in equipment damage.

1. Solder connection must be bright and clean before soldering. Solder used must be of lead alloy with soldering flux. All wires, parts, and soldering gun must be tinned for good connection and maximum transfer of heat.
2. To prevent overheating damage to electrical parts when soldering and unsoldering connections, hold bare wire, lead, or terminal lug close to soldering point with long roundnose pliers. Pliers act as heat sink and absorb excess heat.

END OF TASK

HEAT SHRINKABLE TUBING

Use the heat shrinkable tubing to insulate soldered and crimped electrical connections as follows:

1. Cut desired length of new heat shrinkable tubing twice the length of the connection to be covered.
2. Slide the heat shrinkable tubing onto the wire and out of the way before making electrical connection.
3. After making electrical connection, slide heat shrinkable tubing into place over electrical connection.

HEAT SHRINKABLE TUBING - Continued

WARNING

DO NOT touch heat shrinkable tubing for at least 30 seconds after heating. Heat shrinkable tubing is hot and will burn you. Failure to comply may result in personnel injury. Seek medical attention in event of injury.

4. Hold hot air blow gun 4 to 5 in. (10.2 to 12.7 cm) away from heat shrinkable tubing and apply heat for approximately 30 seconds. Stop applying heat as soon as heat shrinkable tubing forms to the shape of the electrical connection.

END OF TASK

ELECTRICAL GROUND POINTS

Many electrical problems are the result of poor ground connection. You can ensure that ground connections are good by performing the following steps.

WARNING

Although battery cable must be connected in order to test electrical circuit voltage, disconnect battery ground cable from prime mover before performing resistance tests or replacing parts. This will prevent electrical shock and equipment damage. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

1. Remove hardware connecting ground cable terminal lug to ground point.

ELECTRICAL GROUND POINTS - Continued

WARNING

- Solvent cleaning compound MIL-PRF-680 may be irritating to the eyes and skin. Wear protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Use solvent cleaning compound MIL-PRF-680 in a well-ventilated area. Use respirator as needed. Accidental ingestion can cause irritation of digestive tract and respiratory tract. May cause lung and central nervous system damage. Can be fatal if swallowed. Inhalation of high/massive concentrations can cause coma or be fatal. First aid for ingestion: DO NOT induce vomiting. Seek immediate medical attention. First aid for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- MIL-PRF-680 solvent is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Improper cleaning methods and use of unauthorized cleaning liquids or solvents can injure personnel and damage equipment. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of in accordance with authorized facility procedures. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

2. Clean mounting hardware, ground cable terminal lugs, and ground point with cleaning solvent and scrub brush.
3. Remove any rust.
4. Look for cracks, loose terminal lugs, and stripped threads. Replace any defective parts.

ELECTRICAL GROUND POINTS - Continued

5. Install hardware connecting ground cable terminal lug to ground point. Ensure that all hardware is tight.

END OF TASK

IDENTIFICATION BAND REPLACEMENT

1. Remove identification band (Figure 3, Item 2) from wire lead (Figure 3, Item 1). Discard identification band (Figure 3, Item 2).
2. Using metal stamping die set, mark new identification tag (Figure 3, Item 2).
3. Install new identification band (Figure 3, Item 2) on wire lead (Figure 3, Item 1).
4. Secure new identification band (Figure 3, Item 2) to wire lead (Figure 3, Item 1) by bending tab (Figure 3, Item 3).

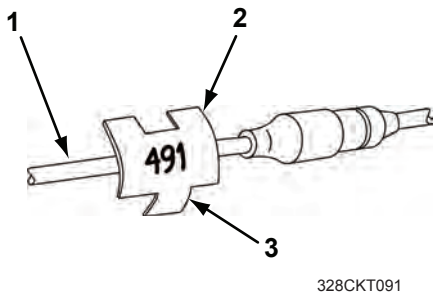


Figure 3. Identification Band Replacement.

END OF TASK

TERMINAL REPLACEMENT

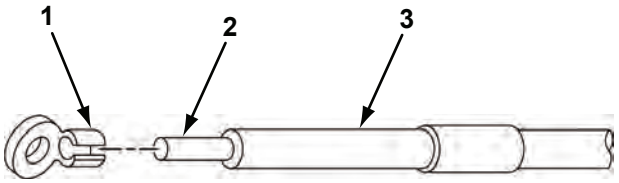
1. Remove terminal (Figure 4, Item 1) from wire lead (Figure 4, Item 2). Discard terminal (Figure 4, Item 1).

CAUTION

Remove only enough insulation to fill cavity on new terminal. Failure to comply may result in equipment damage.

2. Remove insulation (Figure 4, Item 3) from wire lead (Figure 4, Item 2).
3. Use a crimping tool to install new terminal (Figure 4, Item 1) on wire lead (Figure 4, Item 2).
4. Connect intervehicular connector and check for proper operation (WP 0005).

TERMINAL REPLACEMENT - Continued



328CKT092

Figure 4. Terminal Replacement.

END OF TASK

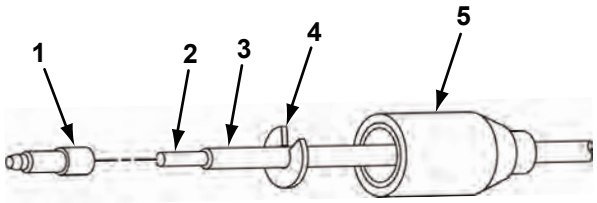
MALE CONNECTOR REPAIR

1. Position shell (Figure 5, Item 5) from contact (Figure 5, Item 1) and remove washer (Figure 5, Item 4) from insulation (Figure 5, Item 3).
2. Remove wire contact (Figure 5, Item 1) from wire lead (Figure 5, Item 2). Discard contact (Figure 5, Item 1).

CAUTION

Remove only enough insulation to fill cavity on new terminal. Failure to comply may result in equipment damage.

3. Remove insulation (Figure 5, Item 3) from wire lead (Figure 5, Item 2).
4. Use a crimping tool to install new contact (Figure 5, Item 1) on wire lead (Figure 5, Item 2).
5. Install washer (Figure 5, Item 4) on insulation (Figure 5, Item 3) and position shell (Figure 5, Item 5) over contact (Figure 5, Item 1).
6. Connect intervehicular connector and check for proper operation (WP 0005).



328CKT095

Figure 5. Male Connector Repair.

END OF TASK

FEMALE CONNECTOR REPAIR

1. Position shell (Figure 6, Item 5) from insulator (Figure 6, Item 4) and terminal (Figure 6, Item 1) on wire lead (Figure 6, Item 2).
2. Remove terminal (Figure 6, Item 1) from wire lead (Figure 6, Item 2). Discard terminal (Figure 6, Item 1).

CAUTION

Remove only enough insulation to fill cavity on new terminal. Failure to comply may result in equipment damage.

3. Remove insulation (Figure 6, Item 3) from wire lead (Figure 6, Item 2).
4. Use a crimping tool to install new terminal (Figure 6, Item 1) on wire lead (Figure 6, Item 2).
5. Position insulator (Figure 6, Item 4) and shell (Figure 6, Item 5) over terminal (Figure 6, Item 1) on wire lead (Figure 6, Item 2).
6. Connect intervehicular connector and check for proper operation (WP 0005).

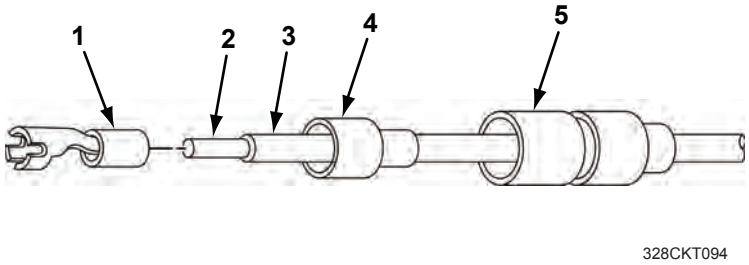


Figure 6. Female Connector Repair.

END OF TASK

RECEPTACLE REPAIR

1. Remove nut (Figure 7, Item 1) and grommet (Figure 7, Item 2) from connector (Figure 7, Item 5).
2. Remove terminals (Figure 7, Item 4) from grommet (Figure 7, Item 2).

NOTE

Only unsolder leads that need to be repaired.

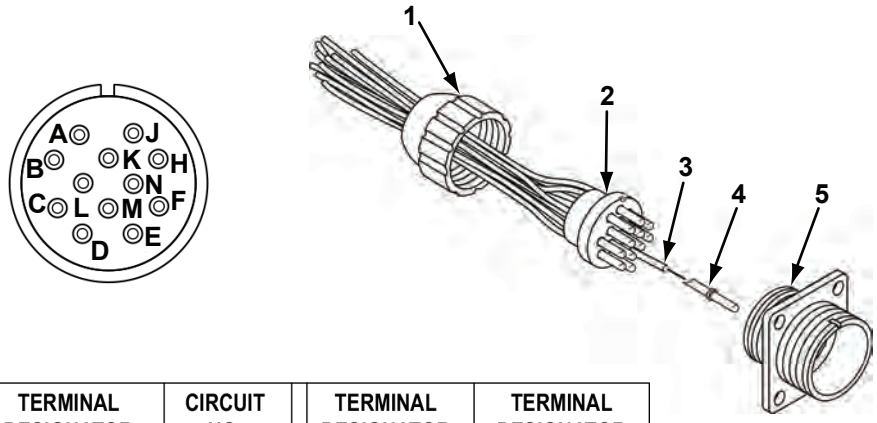
3. Remove terminals (Figure 7, Item 4) from wire leads (Figure 7, Item 3). Discard terminal (Figure 7, Item 4).

CAUTION

Insert terminals in proper location according to chart in Figure 7. Failure to comply may result in equipment damage.

4. Install wire lead (Figure 7, Item 3) through grommet (Figure 7, Item 2).
5. Heat the solder well in new terminal (Figure 7, Item 4). While solder is hot, insert wire lead (Figure 7, Item 3) into terminal (Figure 7, Item 4).
6. Install terminals (Figure 7, Item 4) in grommet (Figure 7, Item 2).
7. Install grommet (Figure 7, Item 2) in connector (Figure 7, Item 5) with nut (Figure 7, Item 1).
8. Connect intervehicular connector and check for proper operation (WP 0005).

RECEPTACLE REPAIR - Continued



TERMINAL DESIGNATOR	CIRCUIT NO.	TERMINAL DESIGNATOR	TERMINAL DESIGNATOR
A	24-484	H	BLANK
B	22-461	J	22-460
C	24-483	K	BLANK
D	90	L	BLANK
E	21-489	M	BLANK
F	23	N	BLANK

328CKT093

Figure 7. Receptacle Repair.

END OF TASK

INSTALLATION

NOTE

To make installation easier, tape connector bundles to main harness if desired.

1. Install eight clamps (Figure 8, Item 1) on trailer frame.
2. Install chassis wire harness (Figure 8, Item 7) through eight clamps (Figure 8, Item 1).
3. Install front and rear ground leads (Figure 8, Item 6) with two new lockwashers (Figure 8, Item 2) and two nuts (Figure 8, Item 3).
4. Connect eight rear light harness connectors (Figure 8, Item 9).
5. Connect five rear clearance light harness connectors (Figure 8, Item 8).
6. Connect two front clearance light harness connectors (Figure 8, Item 4).
7. Connect six harness connectors (Figure 8, Item 5) at intervehicular wiring harness (Figure 8, Item 10).
8. Install eight new lockwashers (Figure 8, Item 2) and nuts (Figure 8, Item 3) securing eight clamps (Figure 8, Item 1).
9. Connect trailer to prime mover and test lights (WP 0005).

INSTALLATION - Continued

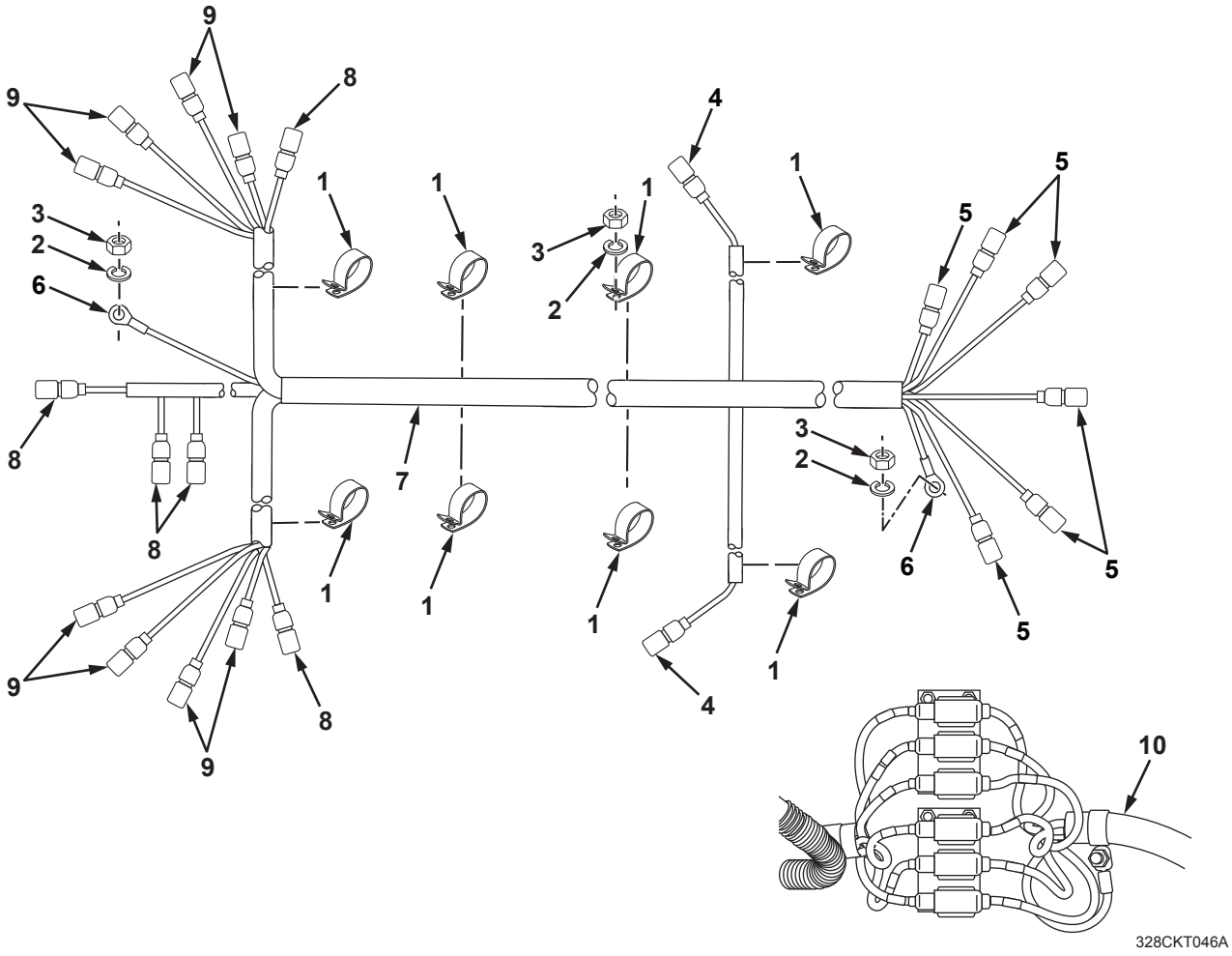


Figure 8. Chassis Wiring Harness Installation.

END OF TASK

FOLLOW-ON TASK

Install electrical covers (WP 0068).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
AXLE REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Personnel Required
(2)

References
TM 9-4910-783-13&P
TM 10-7360-226-13&P

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover (WP 0005)
Spring brake chambers removed (WP 0050)
Camshafts and bearings removed (WP 0048)
Torque arms, spring rollers, and springs removed (WP 0065)

WARNING

Axle weighs 225 lb (102 kg). Suitable lifting devices rated at a minimum of 450 lb (204 kg) and assistance will be needed to perform this procedure. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

CAUTION

This task can be completed in a safer manner if the container is removed from the trailer prior to starting the task. Refer to TM 9-4910-783-13&P or TM 10-7360-226-13&P. If the mission does not permit the removal of the container, extra caution and support are required. The trailer may shift. Failure to comply may cause equipment damage.

REMOVAL

Roll axle assembly from underneath trailer.

END OF TASK

INSTALLATION

Position axle assembly underneath suspension hangers.

END OF TASK

FOLLOW-ON TASKS

1. Install springs, spring rollers, and torque arms (WP 0065).
2. Install bearings and camshafts (WP 0048).
3. Install spring brake chambers (WP 0050).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
SERVICE BRAKES MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)
Retaining Ring Pliers Set
(WP 0109, Table 1, Item 8)

Materials/Parts
Brush, Scrub (WP 0108, Table 1, Item 4)
Cleaning Solvent, Type II
(WP 0108, Table 1, Item 5)
Parts Kit, Brake Shoe
(WP 0100, Figure KITS, Item 2)
Rag, Wiping (WP 0108, Table 1, Item 15)
Retaining Ring Qty: 2
(WP 0082, Figure 6, Item 20)
Spring Pin Qty: 2
(WP 0082, Figure 6, Item 23)

Personnel Required
(2)

References
WP 0033
WP 0035
WP 0056

Equipment Condition
Wheels chocked (WP 0005)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)
Hub and drum assembly removed (WP 0056)

WARNING

- Wear eye protection when removing and installing springs and spring pins to prevent them from flying off and hitting your face. Failure to comply may result in personnel injury. Seek medical attention in case of injury.
- Wear eye protection when removing and installing retaining rings to prevent them from flying off and hitting your face. Failure to comply may result in personnel injury. Seek medical attention in case of injury.

NOTE

There are four brake assemblies, all are maintained the same way. This procedure covers the maintenance of one brake assembly.

REMOVAL

1. Back off slack adjuster nut (Figure 1, Item 1) until it separates from slack adjuster (Figure 1, Item 2).
2. Turn hex head (Figure 1, Item 3) of internal worm shaft counterclockwise to back off slack adjuster (Figure 1, Item 2).
3. Remove two retaining rings (Figure 1, Items 6 and 7) and two brake anchor pins (Figure 1, Items 14 and 18). Discard retaining rings (Figure 1, Items 6 and 7) and brake anchor pins (Figure 1, Items 14 and 18).
4. Remove two retaining springs (Figure 1, Item 15) from brake shoe assemblies (Figure 1, Items 13 and 19). Discard retaining springs (Figure 1, Item 15).
5. Remove brake shoe assemblies (Figure 1, Items 13 and 19), spring (Figure 1, Item 11), and camshaft roller (Figure 1, Item 10) from axle spindle (Figure 1, Item 9). Discard spring (Figure 1, Item 11) and camshaft roller (Figure 1, Item 10).
6. Remove spring (Figure 1, Item 11) from brake shoe assemblies (Figure 1, Items 13 and 19). Discard spring (Figure 1, Item 11).
7. Remove upper roller (Figure 1, Item 17) and lower roller (Figure 1, Item 16) from brake shoe assemblies (Figure 1, Items 13 and 19). Discard upper roller (Figure 1, Item 17) and lower roller (Figure 1, Item 16).
8. Remove two spring pins (Figure 1, Item 12) from brake shoe assemblies (Figure 1, Items 13 and 19). Discard spring pins (Figure 1, Item 12).

NOTE

Perform Step 9 only if bushings in axle spider are worn.

9. Remove upper bushing (Figure 1, Item 4) and lower bushing (Figure 1, Item 8) from axle spider (Figure 1, Item 5). Discard worn bushings (Figure 1, Items 4 and 8).

REMOVAL - Continued

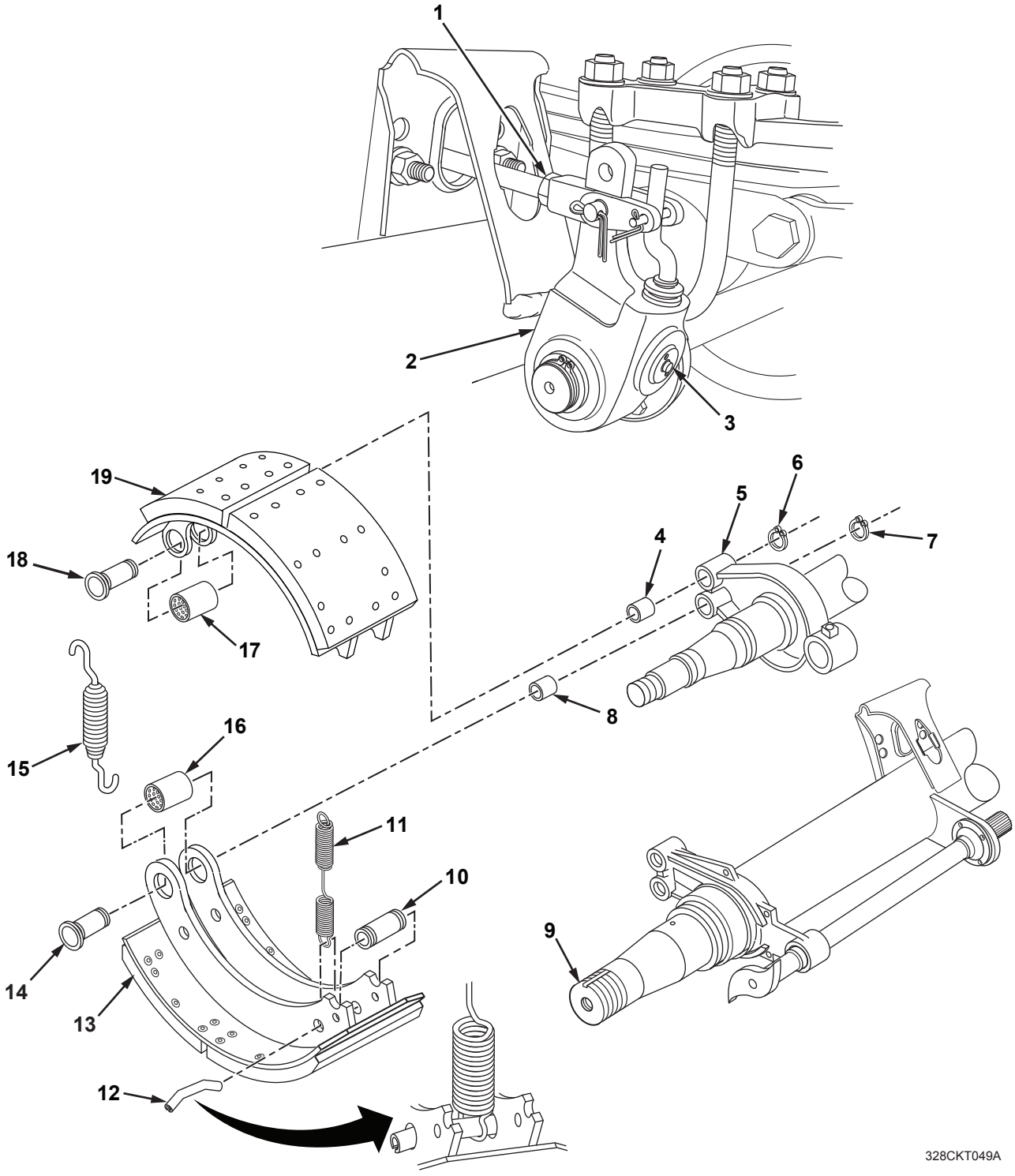


Figure 1. Service Brake Removal.

END OF TASK

CLEANING

WARNING

- Solvent cleaning compound MIL-PRF-680 may be irritating to the eyes and skin. Wear protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Use solvent cleaning compound MIL-PRF-680 in a well-ventilated area. Use respirator as needed. Accidental ingestion can cause irritation of digestive tract and respiratory tract. May cause lung and central nervous system damage. Can be fatal if swallowed. Inhalation of high/massive concentrations can cause coma or be fatal. First aid for ingestion: DO NOT induce vomiting. Seek immediate medical attention. First aid for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- MIL-PRF-680 solvent is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Improper cleaning methods and use of unauthorized cleaning liquids or solvents can injure personnel and damage equipment. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of in accordance with authorized facility procedures. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

CAUTION

DO NOT allow lubricants or solvents to get on brake shoes. These materials will damage brake linings and result in poor braking action.

CLEANING - Continued

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

1. Clean all parts except brake shoes with brush and cleaning solvent. Allow parts to air dry.

WARNING

DO NOT use a dry brush or compressed air to clean brake shoes. There may be dust on brake shoes which may be dangerous to your health if you breathe it in. Dampen surface of lining with water and use a soft bristle brush to clean brake shoes. Failure to comply may result personnel injury.

2. Dampen and clean brake shoes.

END OF TASK

INSPECTION

NOTE

If brake shoes are being replaced, replace all brake components.

Inspect brake shoes for wear and scoring. Replace brake shoes if linings are worn to less than 5/16 in. (7.93 mm) thick at any place on the linings.

END OF TASK

INSTALLATION

1. Install new upper bushing (Figure 2, Item 2) and new lower bushing (Figure 2, Item 6) in axle spider (Figure 2, Item 3), if removed.
2. Install two new spring pins (Figure 2, Item 11) into brake shoes (Figure 2, Items 1 and 12).
3. Install new upper roller (Figure 2, Item 16) on upper brake shoe (Figure 2, Item 1) and new lower roller (Figure 2, Item 15) on lower brake shoe (Figure 2, Item 12).
4. Install new spring (Figure 2, Item 10) on spring pins (Figure 2, Item 11) and new camshaft roller (Figure 2, Item 9).
5. Position brake shoe assemblies (Figure 2, Items 1 and 12) with spring (Figure 2, Item 10) and two rollers (Figure 2, Items 15 and 16) and camshaft roller (Figure 2, Item 9) so the camshaft roller (Figure 2, Item 9) engages camshaft (Figure 2, Item 7) and brake shoe assemblies (Figure 2, Items 1 and 12) straddle axle spindle (Figure 2, Item 8).
6. Install two new retaining springs (Figure 2, Item 14) on brake shoe assemblies (Figure 2, Items 1 and 12).
7. Lift upper brake shoe (Figure 2, Item 1) and insert one new anchor pin (Figure 2, Item 17) in upper bushing (Figure 2, Item 2), and install new retaining ring (Figure 2, Item 4) on anchor pin (Figure 2, Item 17).
8. Press down on lower brake shoe assembly (Figure 1, Item 12) and insert one new anchor pin (Figure 2, Item 13) in lower bushing (Figure 2, Item 6), and install new retaining ring (Figure 2, Item 5) on anchor pin (Figure 2, Item 13).
9. Install hub and drum assembly (WP 0056).
10. Install wheel and tire assembly (WP 0033).

INSTALLATION - Continued

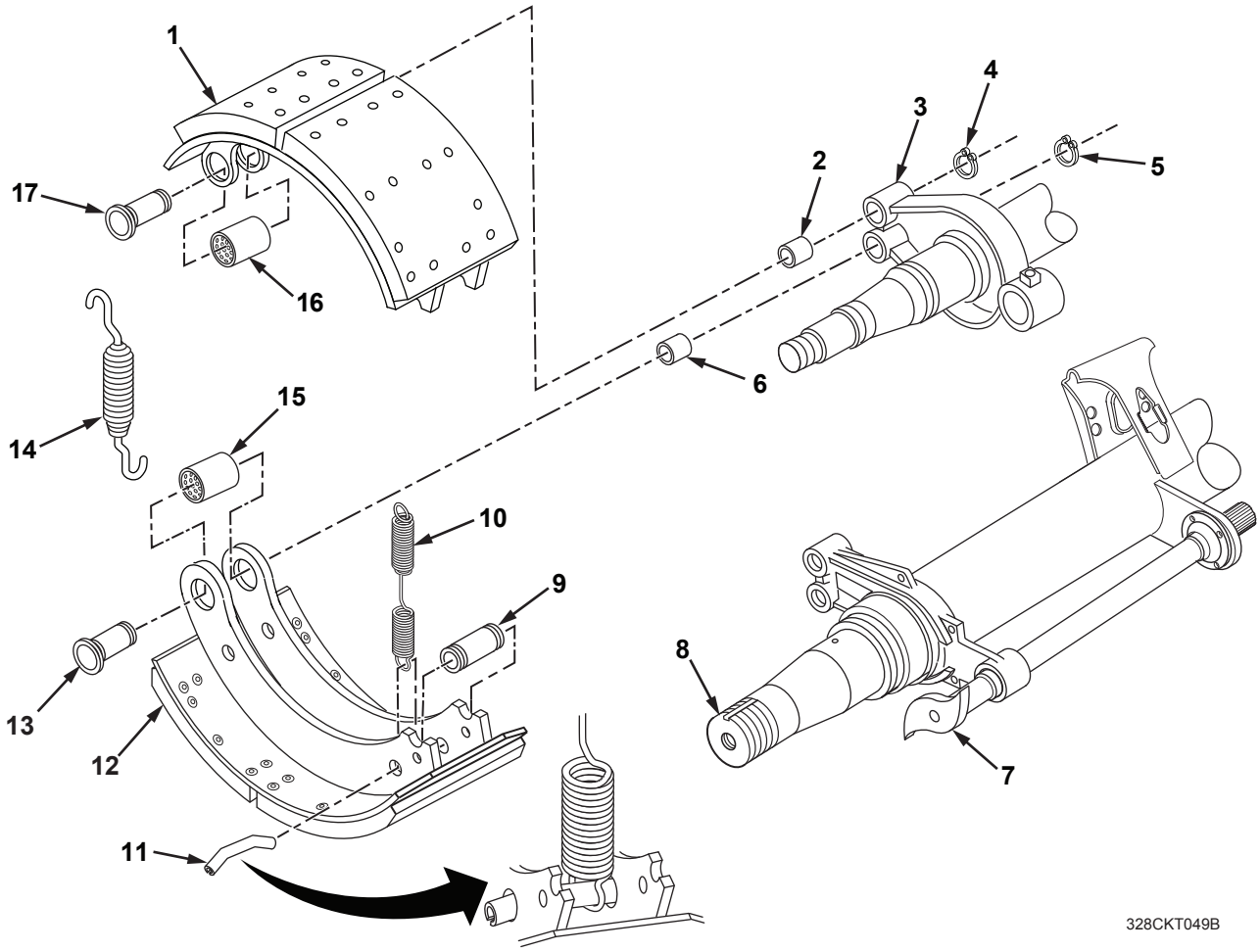


Figure 2. Service Brake Installation.

END OF TASK

ADJUST BRAKE

1. Ensure spring brake chamber is uncaged (WP 0035).
2. Raise wheel to be adjusted (WP 0033).
3. Push hex head (Figure 3, Item 2) of internal worm shaft in against slack adjuster (Figure 3, Item 1) to unlock internal worm shaft.
4. Turn hex head (Figure 3, Item 2) of internal worm shaft clockwise on slack adjuster (Figure 3, Item 1) until wheel cannot be turned.
5. Back off hex head (Figure 3, Item 2) until wheel turns freely.
6. Lower wheel (WP 0033).
7. Repeat Steps 1 through 6 for other slack adjusters as required.

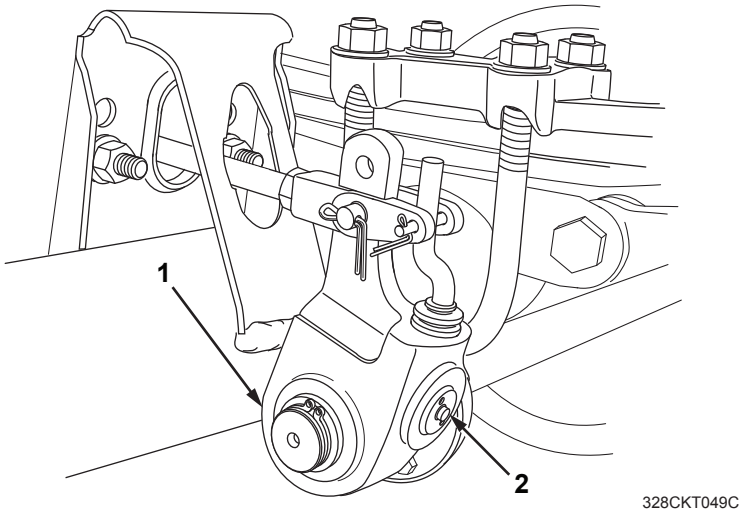


Figure 3. Service Brake Adjustment.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
CAMSHAFT AND BEARINGS REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Grease, Automotive and Artillery (GAA)
(WP 0108, Table 1, Item 11)
Lockwasher Qty: 4 (WP 0082, Figure 6, Item 9)
Rag, Wiping (WP 0108, Table 1, Item 15)
Retaining Ring (WP 0082, Figure 6, Item 11)
Seal Qty: 2 (WP 0082, Figure 6, Item 13)

References
WP 0049

Equipment Condition
Wheels chocked (WP 0005)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)
Brake shoes removed (WP 0047)
Slack adjuster removed (WP 0049)

WARNING

Wear eye protection when removing and installing retaining rings to prevent them from flying off and hitting your face. Failure to comply may result in personnel injury. Seek medical attention in case of injury.

REMOVAL

1. Remove retaining ring (Figure 1, Item 10) from retaining ring slot (Figure 1, Item 16).
2. Withdraw camshaft (Figure 1, Item 15) part way and remove retaining ring (Figure 1, Item 10) and flat washer (Figure 1, Item 11) from camshaft (Figure 1, Item 15).
3. Remove camshaft (Figure 1, Item 15) and flat washer (Figure 1, Item 14).
4. Remove four hex nuts (Figure 1, Item 8), lockwashers (Figure 1, Item 7), screws (Figure 1, Item 5), two retaining plates (Figure 1, Items 6 and 9), and bearing assembly (Figure 1, Item 4) from axle bracket (Figure 1, Item 3). Discard lockwashers (Figure 1, Item 7).

NOTE

Perform Steps 5 and 6 only if grease fittings are not working or damaged.

5. Remove grease fitting (Figure 1, Item 2) from retaining plate (Figure 1, Item 9).
6. Remove grease fitting (Figure 1, Item 1) from spider (Figure 1, Item 17).
7. Remove two seals (Figure 1, Item 12) and bushing (Figure 1, Item 13) from spider (Figure 1, Item 17). Discard seals (Figure 1, Item 12).

END OF TASK

INSTALLATION

1. Install two new seals (Figure 1, Item 12) and bushing (Figure 1, Item 13) in spider (Figure 1, Item 17). Ensure the slot in the bushing (Figure 1, Item 13) aligns with the hole in the spider (Figure 1, Item 17) for grease fitting (Figure 1, Item 1).
2. If removed, install grease fitting (Figure 1, Item 1) in spider (Figure 1, Item 17).
3. Place bearing (Figure 1, Item 4) on one retaining plate (Figure 1, Item 9) so hole in bearing assembly (Figure 1, Item 4) aligns with hole in retaining plate (Figure 1, Item 9). If removed, insert grease fitting (Figure 1, Item 2) through hole in retaining plate (Figure 1, Item 9).
4. Install bearing (Figure 1, Item 4) with retaining plate (Figure 1, Item 9), grease fitting (Figure 1, Item 2), and second retaining plate (Figure 1, Item 6) on axle bracket (Figure 1, Item 3) with four screws (Figure 1, Item 5), new lockwashers (Figure 1, Item 7), and hex nuts (Figure 1, Item 8).

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

5. Lubricate length of camshaft (Figure 1, Item 15) with grease.
6. Install flat washer (Figure 1, Item 14) on camshaft (Figure 1, Item 15).
7. Install camshaft (Figure 1, Item 15) through bushing (Figure 1, Item 13) and install flat washer (Figure 1, Item 11), and new retaining ring (Figure 1, Item 10) on camshaft (Figure 1, Item 15).

INSTALLATION - Continued

8. Install camshaft (Figure 1, Item 15) through retaining plates (Figure 1, Items 6 and 9) and bearing (Figure 1, Item 4).
9. Install new retaining ring (Figure 1, Item 10) in retaining ring slot (Figure 1, Item 16).

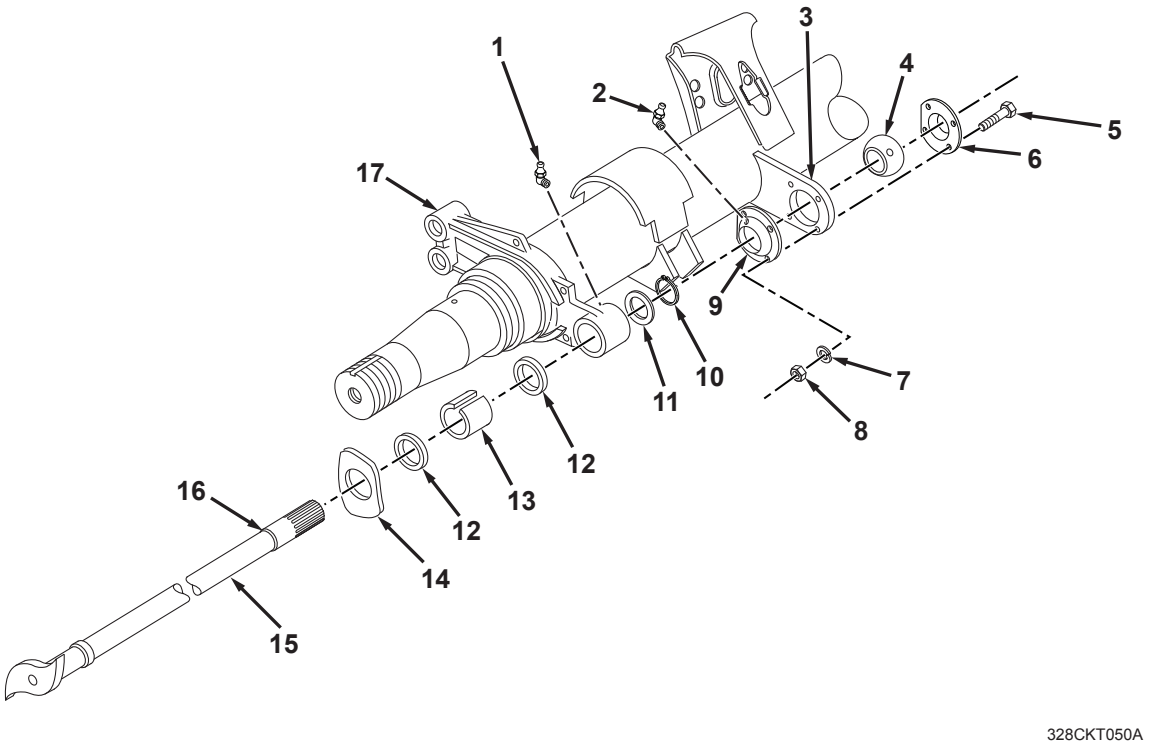


Figure 1. Camshaft and Bearings Removal and Installation.

END OF TASK

FOLLOW-ON TASKS

1. Install brake shoes (WP 0047).
2. Install slack adjuster (WP 0049).
3. Pressurize and test air brake system (WP 0005).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
SLACK ADJUSTERS REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Grease, Automotive and Artillery (GAA)
(WP 0108, Table 1, Item 11)
Retaining Ring (WP 0082, Figure 6, Item 5)

References
WP 0047
WP 0073

Equipment Condition
Vehicle parked on level surface (WP 0005)

Equipment Condition (cont.)
Trailer disconnected from prime mover
(WP 0005)
Wheels chocked (WP 0005)
Air reservoir tanks drained (WP 0030)
Spring brake chambers caged (WP 0035)

WARNING

Wear eye protection when removing and installing retaining rings to prevent them from flying off and hitting your face. Failure to comply may result in personnel injury. Seek medical attention in case of injury.

REMOVAL

NOTE

- The cotter pins and headed pins securing the slack adjuster are supplied with the spring brake chamber and must be retained.
- Slack adjuster has upper and lower pin holes. Mark the pin placement of the original slack adjuster.

1. Remove two cotter pins (Figure 1, Items 1 and 3) and two headed pins (Figure 1, Item 2 and 4) from spring brake chamber pushrod end (Figure 1, Item 5). Retain cotter pins and headed pins.
2. Remove retaining ring (Figure 1, Item 7) and flat washer (Figure 1, Item 6) from camshaft (Figure 1, Item 8). Discard retaining ring (Figure 1, Item 7).
3. Turn hex head (Figure 1, Item 10) of internal worm shaft counterclockwise to back off slack adjuster (Figure 1, Item 9).
4. Remove slack adjuster (Figure 1, Item 9) from camshaft (Figure 1, Item 8).

END OF TASK

INSTALLATION

1. Install slack adjuster (Figure 1, Item 9) on camshaft (Figure 1, Item 8).
2. Push hex head (Figure 1, Item 10) of internal worm shaft in against slack adjuster (Figure 1, Item 9) to unlock internal worm shaft.
3. Turn hex head (Figure 1, Item 10) of internal worm shaft clockwise on slack adjuster (Figure 1, Item 9) until wheel cannot be turned.
4. Install flat washer (Figure 1, Item 6) and new retaining ring (Figure 1, Item 7) on camshaft (Figure 1, Item 8).

NOTE

Ensure the pin placement is the same as that of the original slack adjuster.

5. Install two headed pins (Figure 1, Items 2 and 4) through holes of slack adjuster (Figure 1, Item 9) and pushrod end (Figure 1, Item 5) matching the placement of the original slack adjuster.
6. Install cotter pins (Figure 1, Items 1 and 3) in two headed pins (Figure 1, Items 2 and 4).

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

7. Lubricate slack adjuster (WP 0073).

INSTALLATION - Continued

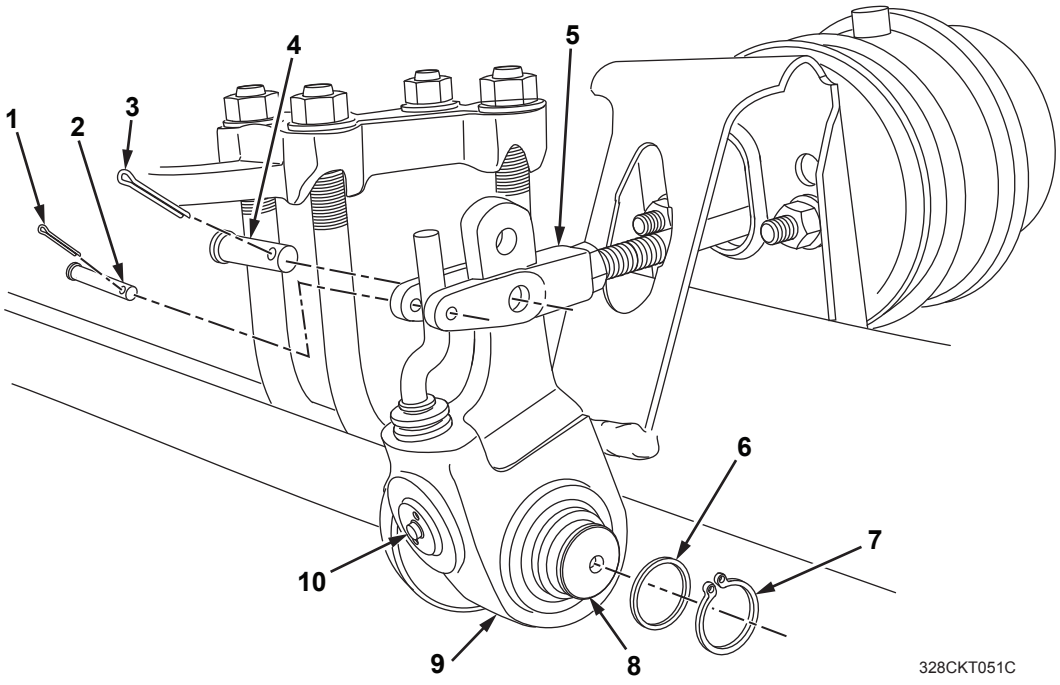


Figure 1. Slack Adjuster Removal and Installation.

END OF TASK

FOLLOW-ON TASKS

1. Adjust brakes (WP 0047).
2. Uncage spring brake chambers (WP 0035).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
SPRING BRAKE CHAMBER REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)
Torque wrench, 3/8 in. drive,
0 to 75 lb-ft (0 to 102 N•m)
(WP 0109, Table 1, Item 18)

Materials/Parts
Tag, Marker Qty: AR (WP 0108, Table 1, Item 17)

References
WP 0047

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)
Spring brake chamber caged (WP 0035)
Air reservoir tanks drained (WP 0030)

WARNING

- To prevent injury, keep hands away from spring brake chamber pushrods and slack adjusters. They will move as service brakes are operated and will automatically apply if system pressure drops. Hands and fingers may be pinched or cut by moving parts. Failure to comply may result in personnel injury. Seek medical attention in event of injury.
- Disassembly of spring brake chambers is NOT authorized. When inspecting or caging spring brake chambers, DO NOT position yourself in front of or in line with the chamber. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Before performing any work on the air brake system, chock front and rear wheels to prevent trailer movement. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Wear eye protection when under trailer. Failure to comply may result in personnel injury. Seek medical attention in event of injury.
- All spring brake chambers must be caged before you work on the air brake system. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

REMOVAL

1. Tag and disconnect two air lines (Figure 1, Items 6 and 7) from spring brake chamber (Figure 1, Item 8).
2. Remove two cotter pins (Figure 1, Items 2 and 4) and two headed pins (Figure 1, Items 1 and 3) from slack adjuster (Figure 1, Item 15). Discard cotter pins (Figure 1, Items 2 and 4) and headed pins (Figure 1, Items 1 and 3).
3. Remove two nuts (Figure 1, Item 13), lockwashers (Figure 1, Item 14), and remove spring brake chamber (Figure 1, Item 8) from axle (Figure 1, Item 11). Discard nuts (Figure 1, Item 13) and lockwashers (Figure 1, Item 14).
4. Loosen nut (Figure 1, Item 9) and remove pushrod end (Figure 1, Item 10) and nut (Figure 1, Item 9) from pushrod (Figure 1, Item 5).
5. Uncage spring brake chamber (WP 0035).

END OF TASK

INSTALLATION

1. Install nut (Figure 1, Item 9) and pushrod end (Figure 1, Item 10) on pushrod (Figure 1, Item 5).
2. Cage new spring brake chamber (WP 0035).
3. With spring brake chamber caged, measure length of pushrod (Figure 1, Item 5). Length should be 7 in. (17.78 cm).
4. If pushrod (Figure 1, Item 5) length is not 7 in. (17.78 cm), loosen nut (Figure 1, Item 9) and turn pushrod end (Figure 1, Item 10) clockwise or counterclockwise on pushrod (Figure 1, Item 5), adjusting pushrod (Figure 1, Item 5) length to 7 in. (17.78 cm).
5. Tighten nut (Figure 1, Item 9) against pushrod end (Figure 1, Item 10) and apply torque of 15 to 25 lb-ft (20 to 34 N•m).
6. Install spring brake chamber (Figure 1, Item 8) on axle (Figure 1, Item 11) with two lockwashers (Figure 1, Item 14) and two nuts (Figure 1, Item 13).

NOTE

It may be necessary to turn slack adjuster adjustment screw (Figure 1, Item 12) to adjust pushrod.

7. Align pushrod end (Figure 1, Item 10) with bottom hole in slack adjuster (Figure 1, Item 15) and install two headed pins (Figure 1, Items 1 and 3) and two cotter pins (Figure 1, Items 2 and 4).
8. Uncage spring brake chamber (WP 0035).
9. Connect air lines (Figure 1, Items 6 and 7).

INSTALLATION - Continued

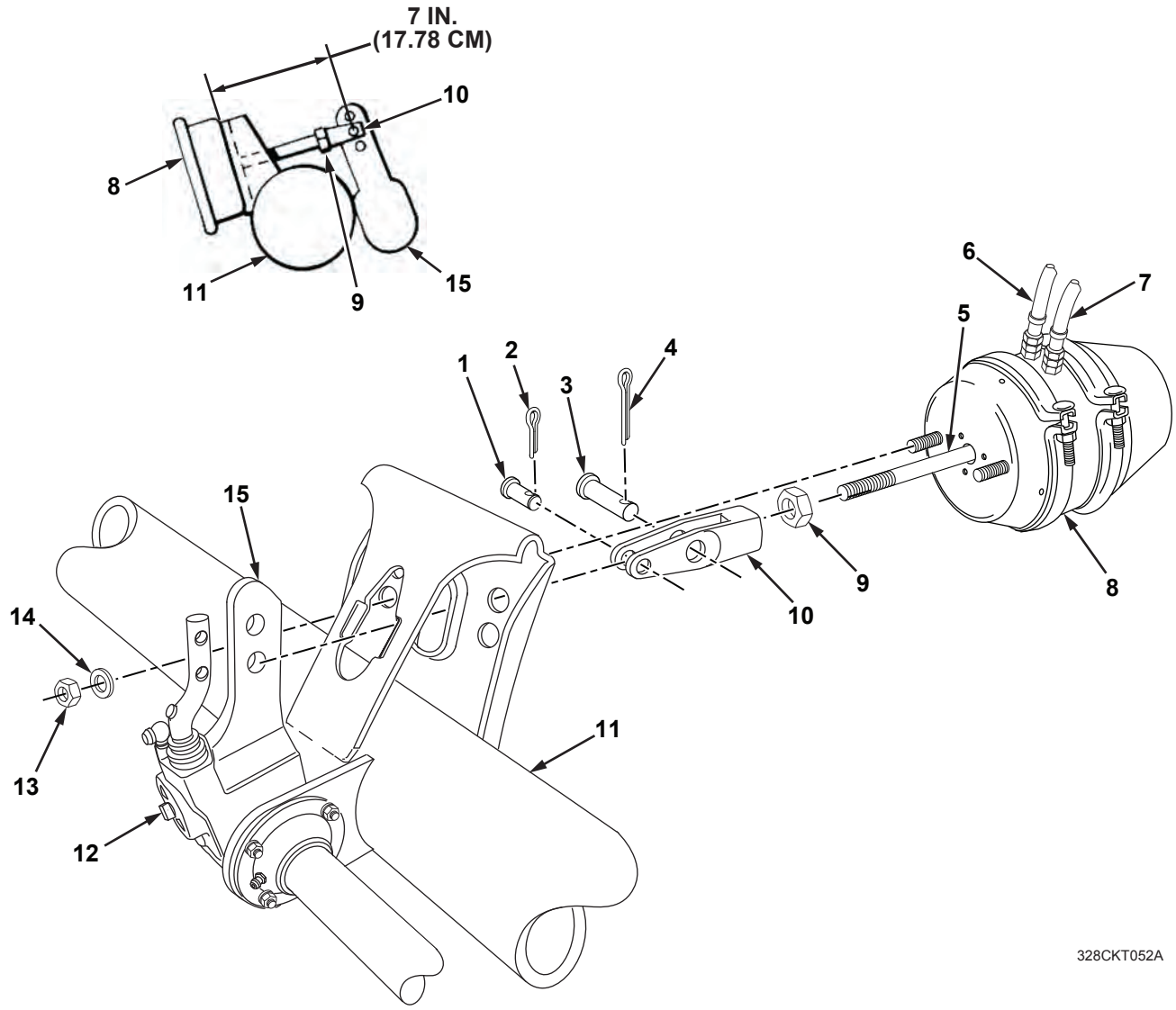


Figure 1. Spring Brake Chamber Removal and Installation.

END OF TASK

FOLLOW-ON TASK

Adjust brakes (WP 0047).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
AIR LINES, FITTINGS, AND HOSES REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Lockwasher Qty: AR (WP 0083, Figure 7, Item 2)
Tag, Marker (WP 0108, Table 1, Item 17)
Tape, Antiseizing
(WP 0108, Table 1, Item 18)

References
WP 0050

References (cont.)
WP 0052
WP 0053
WP 0054

Equipment Condition
Wheels chocked (WP 0005)
Landing leg down (WP 0005)
Trailer disconnected from prime mover (WP 0005)
Air reservoir tanks drained (WP 0030)

WARNING

Wear eye protection when opening air reservoir drain valve and avoid contact with the air stream. Failure to comply may result in personnel injury. Seek medical attention in event of injury.

NOTE

Tag all hoses before disconnecting from vehicle.

REMOVAL OF AIR HOSES AND FITTINGS

1. Remove intervehicular air hoses and gladhands from drawbar. Remove packing from gladhands (WP 0052).
2. Remove hoses (Figure 1, Item 6) from spring brake chambers (Figure 1, Item 7) (WP 0050), trailer valve (Figure 1, Item 8), and relay valves (Figure 1, Item 5) (WP 0053).
3. Remove drain valves from air reservoir tanks (Figure 1, Item 4) (WP 0054).

END OF TASK

INSTALLATION OF AIR HOSES AND FITTINGS

1. Install drain valves in air reservoir tanks (Figure 1, Item 4) (WP 0054).
2. Connect hoses (Figure 1, Item 6) to spring brake chambers (Figure 1, Item 7) (WP 0050), trailer valve (Figure 1, Item 8), and relay valves (Figure 1, Item 5) (WP 0053).
3. Install packings in gladhands (WP 0052).
4. Connect gladhands to intervehicular air hoses (WP 0052).

END OF TASK

REMOVAL OF TUBING AND FITTINGS

NOTE

Tag all air lines before disconnecting.

1. Remove air hose clamps (Figure 1, Item 1), nuts (Figure 1, Item 3), lockwashers (Figure 1, Item 2), and clips (Figure 1, Item 9) as required. Discard lockwashers (Figure 1, Item 2).
2. Remove tube and nut assemblies from relay valves (Figure 1, Item 5), trailer valve (Figure 1, Item 8), and air reservoir tanks (Figure 1, Item 4) (WP 0053).
3. Remove connectors (WP 0053).
4. Remove relay valves (Figure 1, Item 5) (WP 0053).

END OF TASK

INSTALLATION OF TUBING AND FITTINGS

NOTE

Use antiseizing tape on all pipe threads.

1. Install relay valves (Figure 1, Item 5) (WP 0053).
2. Install connectors (WP 0053).
3. Connect tube and nut assemblies to relay valves (Figure 1, Item 5), trailer valve (Figure 1, Item 8), and air reservoir tanks (Figure 1, Item 4) (WP 0053).
4. Install air hose clamps (Figure 1, Item 1), new lockwashers (Figure 1, Item 2), nuts (Figure 1, Item 3), and clips (Figure 1, Item 9) as required.

INSTALLATION OF TUBING AND FITTINGS - Continued

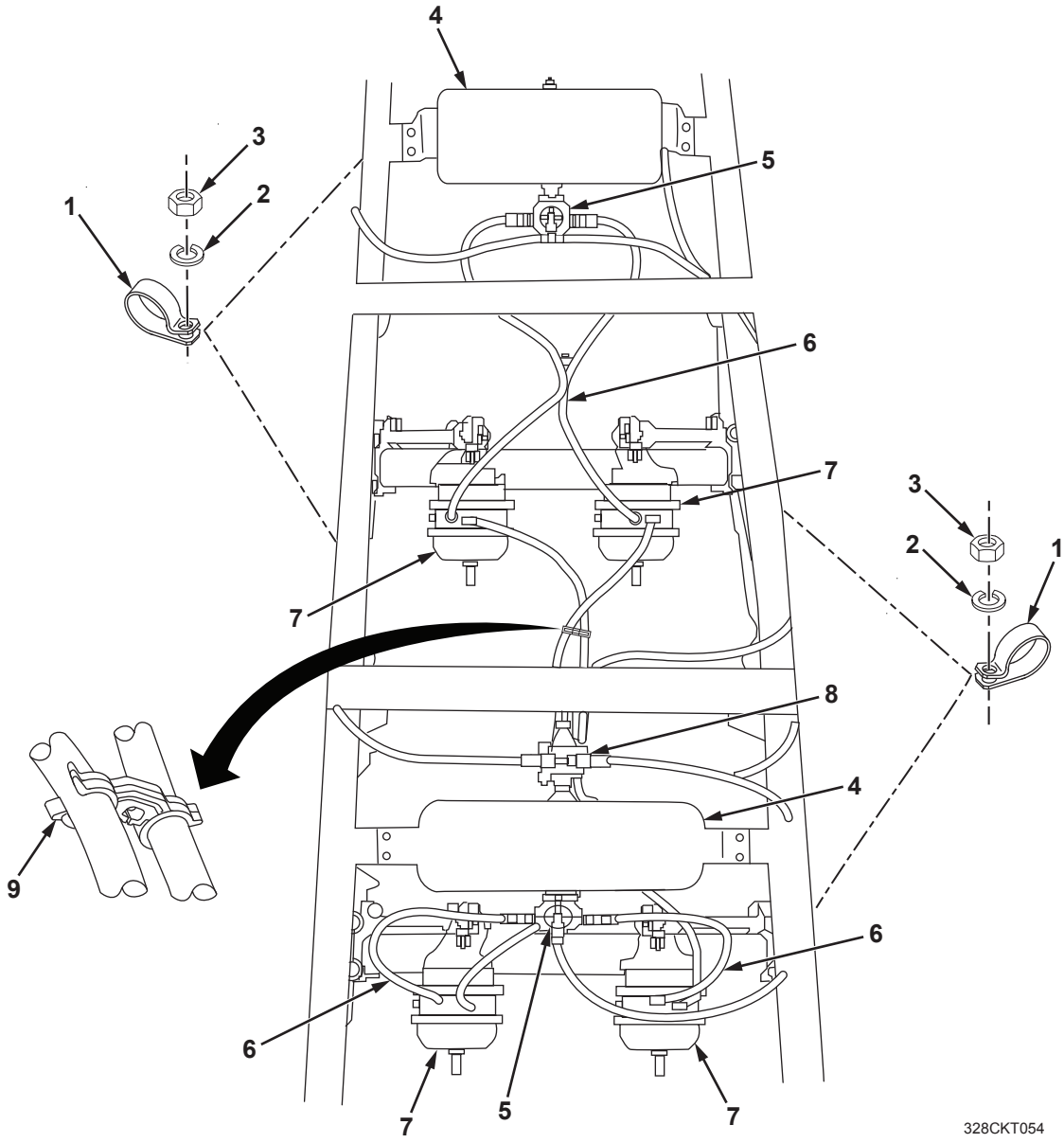


Figure 1. Air Lines and Fittings Removal and Installation.

END OF TASK

FOLLOW-ON TASK

Connect trailer to prime mover (WP 0005).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
GLADHANDS MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Lockwasher Qty: 2
(WP 0084, Figure 8, Item 7)
Preformed packing Qty: 2
(WP 0084, Figure 8, Item 10)
Tape, Antiseizing
(WP 0108, Table 1, Item 18)

References
WP 0072

Equipment Condition
Wheels chocked (WP 0005)
Landing leg down (WP 0005)
Trailer disconnected from prime mover (WP 0005)
Air reservoir tanks drained (WP 0029)

WARNING

Wear eye protection when opening air reservoir drain valve and avoid contact with the air stream. Failure to comply may result in personnel injury. Seek medical attention in event of injury.

NOTE

The service air hose and gladhand are blue and the emergency air hose and gladhand are red.

REMOVAL

1. Remove service (blue) gladhand (Figure 1, Item 1) from service (blue) air hose (Figure 1, Item 2).
2. Remove emergency (red) gladhand (Figure 1, Item 6) from emergency (red) air hose (Figure 1, Item 3).
3. Remove nipple (Figure 1, Item 4) from emergency gladhand (Figure 1, Item 6).
4. Remove two preformed packings (Figure 1, Item 5) from gladhands (Figure 1, Items 1 and 6). Discard preformed packings (Figure 1, Item 5).

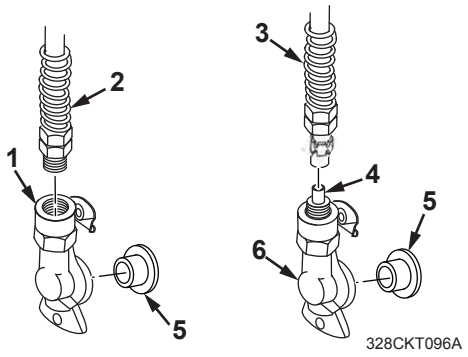


Figure 1. Gladhand Removal.

NOTE

Dummy coupling locations may vary between trailers.

5. Remove two nuts (Figure 2, Item 3), lockwashers (Figure 2, Item 2), screws (Figure 2, Item 4), and dummy coupling (Figure 2, Item 1). Discard lockwashers (Figure 2, Item 2).

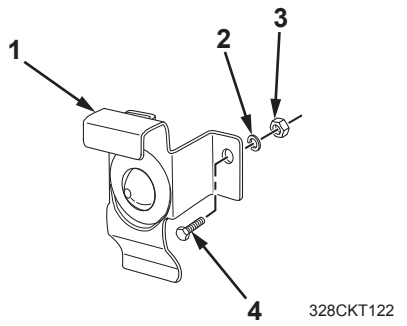


Figure 2. Dummy Coupling Removal.

END OF TASK

INSTALLATION

NOTE

Dummy coupling locations may vary between trailers.

1. Install dummy coupling (Figure 3, Item 1) with two screws (Figure 3, Item 4), new lockwashers (Figure 3, Item 2), and nuts (Figure 3, Item 3).

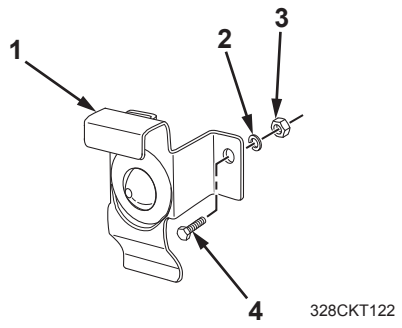


Figure 3. Dummy Coupling Installation.

NOTE

The service air hose and gladhand are blue and the emergency air hose and gladhand are red.

2. Install two new preformed packings (Figure 4, Item 5) on gladhands (Figure 4, Items 1 and 6).
3. Apply antiseizing tape on threads of service (blue) air hose (Figure 4, Item 2) and nipple (Figure 4, Item 4).
4. Install nipple (Figure 4, Item 4) on emergency (red) gladhand (Figure 4, Item 6).
5. Install service (blue) gladhand (Figure 4, Item 1) on service (blue) air hose (Figure 4, Item 2).
6. Install emergency (red) gladhand (Figure 4, Item 6) on emergency (red) air hose (Figure 4, Item 3).

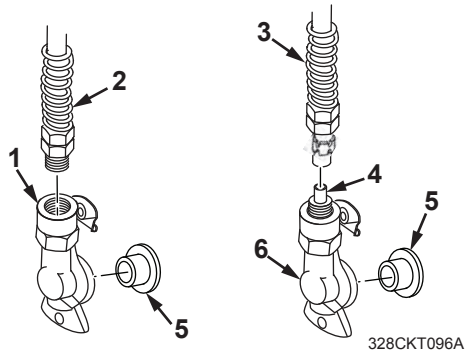


Figure 4. Gladhand Installation.

END OF TASK

FOLLOW-ON TASKS

1. Connect trailer to prime mover (WP 0005).
2. Pressurize air reservoir tanks (WP 0005).
3. Inspect for air leaks (WP 0072).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
RELAY VALVE AND TRAILER VALVE REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Rag, Wiping (WP 0108, Table 1, Item 15)
Tag, Marker (WP 0108, Table 1, Item 17)
Tape, Antiseizing
(WP 0108, Table 1, Item 18)

References
WP 0072

Equipment Condition
Wheels chocked (WP 0005)
Trailer disconnected from prime mover (WP 0005)
Air reservoir tanks drained (WP 0005)

RELAY VALVE REMOVAL

NOTE

There are two relay valves which are removed and installed in the same manner. The following procedure applies to one relay valve.

1. Tag and disconnect four hoses (Figure 1, Items 3, 4, 6, and 7) from relay valve (Figure 1, Item 2).
2. Remove elbow (Figure 1, Item 1) and adapter (Figure 1, Item 5).
3. Turn relay valve (Figure 1, Item 2) counterclockwise and remove from reducer (Figure 1, Item 8).
4. Remove reducer (Figure 1, Item 8) and adapter (Figure 1, Item 10) from air reservoir tank (Figure 1, Item 9).

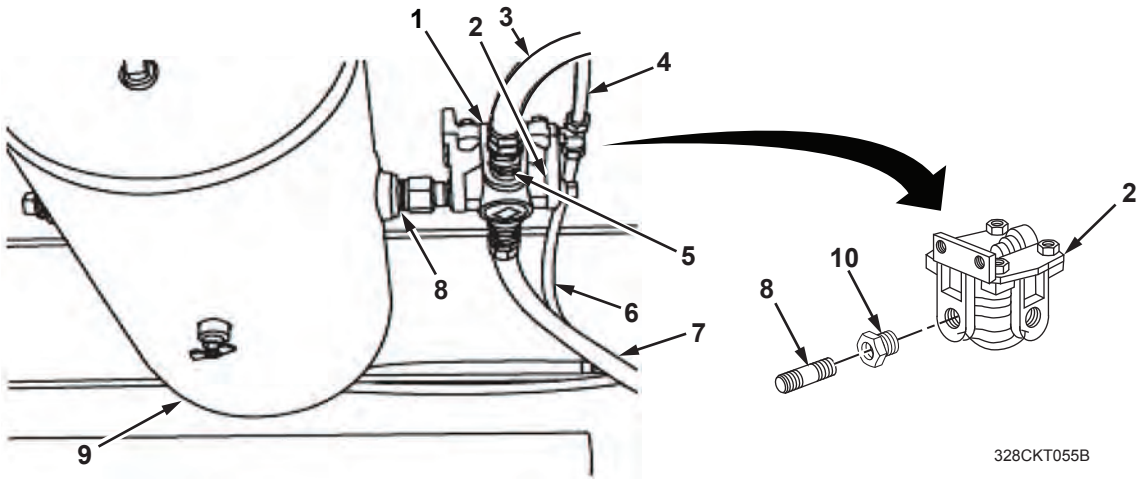


Figure 1. Relay Valve Removal.

END OF TASK

RELAY VALVE INSTALLATION

NOTE

There are two relay valves which are removed and installed in the same manner. The following procedure applies to one relay valve.

1. Install adapter (Figure 2, Item 10) and reducer (Figure 2, Item 8) in air reservoir tank (Figure 2, Item 9).
2. Install relay valve (Figure 2, Item 2) on reducer (Figure 2, Item 8).
3. Install adapter (Figure 2, Item 5) and elbow (Figure 2, Item 1).
4. Install four hoses (Figure 2, Items 3, 4, 6, and 7) to relay valve (Figure 2, Item 2) and remove tags.

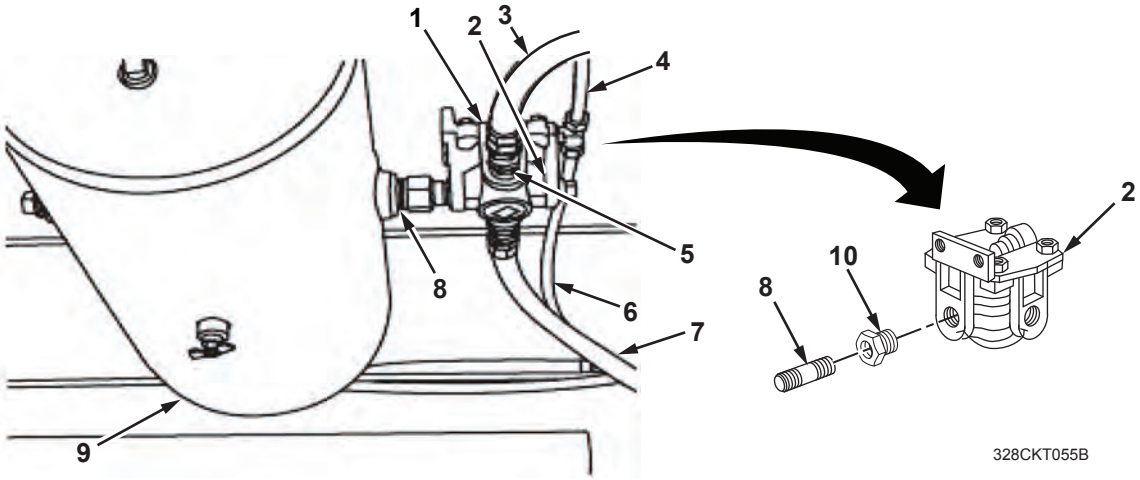


Figure 2. Relay Valve Installation.

END OF TASK

TRAILER VALVE REMOVAL

1. Tag and disconnect four hoses (Figure 3, Items 8, 9, 10, and 11) from trailer valve (Figure 3, Item 2).
2. Tag and disconnect three tube and nut assemblies (Figure 3, Items 5, 6, and 13).
3. Remove elbow (Figure 3, Item 14), two connectors (Figure 3, Item 4), connector (Figure 3, Item 7), connector (Figure 3, Item 3), and tee (Figure 3, Item 1).
4. Turn trailer valve (Figure 3, Item 2) counterclockwise and remove from reducer (Figure 3, Item 15) on air reservoir tank (Figure 3, Item 12).
5. Remove reducer (Figure 3, Item 15) and adapter (Figure 3, Item 16) from air reservoir tank (Figure 3, Item 12).

END OF TASK

TRAILER VALVE INSTALLATION

1. Apply antiseizing tape on the threads of reducer (Figure 3, Item 15), two connectors (Figure 3, Item 4), connector (Figure 3, Item 7), and tee (Figure 3, Item 1).
2. Install adapter (Figure 3, Item 16) and reducer (Figure 3, Item 15) in air reservoir tank (Figure 3, Item 12).
3. Install trailer valve (Figure 3, Item 2) on reducer (Figure 3, Item 15).
4. Install tee (Figure 3, Item 1) on trailer valve (Figure 3, Item 2).
5. Install connector (Figure 3, Item 7), connector (Figure 3, Item 3), two connectors (Figure 3, Item 4), and elbow (Figure 3, Item 14).
6. Install three tube and nut assemblies (Figure 3, Items 5, 6, and 13) and remove tags.
7. Install four hoses (Figure 3, Items 8, 9, 10, and 11) to trailer valve (Figure 3, Item 2).

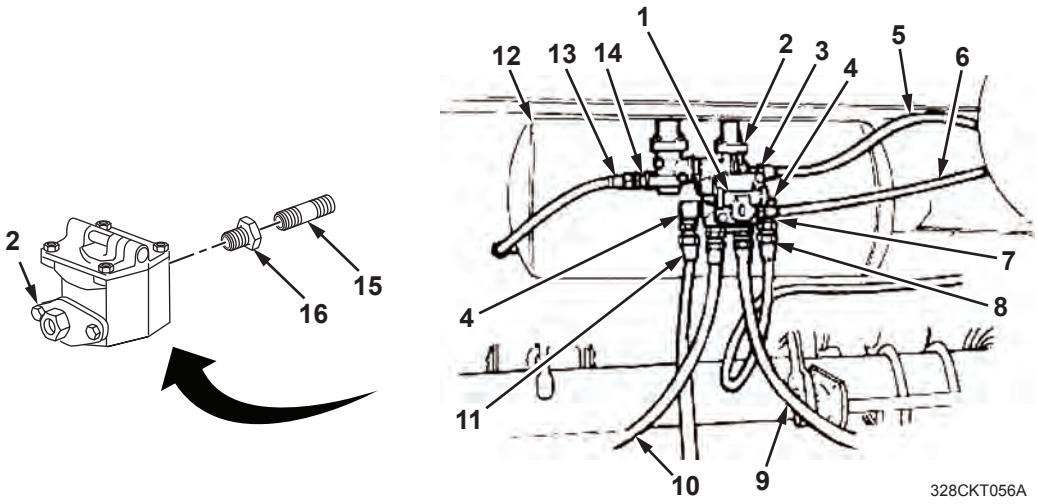


Figure 3. Trailer Valve Removal and Installation.

END OF TASK

FOLLOW-ON TASKS

1. Connect trailer to prime mover (WP 0005).
2. Pressurize and test air brake system (WP 0005).
3. Check for air leaks (WP 0072).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DRAIN VALVE REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Tape, Antiseizing
(WP 0108, Table 1, Item 18)

References
WP 0072

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover (WP 0005)
Air reservoir tanks drained (WP 0030)

NOTE

- There are two drain valves, one under each air reservoir tank.
- Both drain valves are replaced in the same way. This procedure covers one drain valve.
- Use antiseizing tape on drain valve threads.

REMOVAL

Remove drain valve (Figure 1, Item 1).

END OF TASK

INSTALLATION

1. Apply antiseizing tape to threads of drain valve (Figure 1, Item 1).
2. Install drain valve (Figure 1, Item 1).

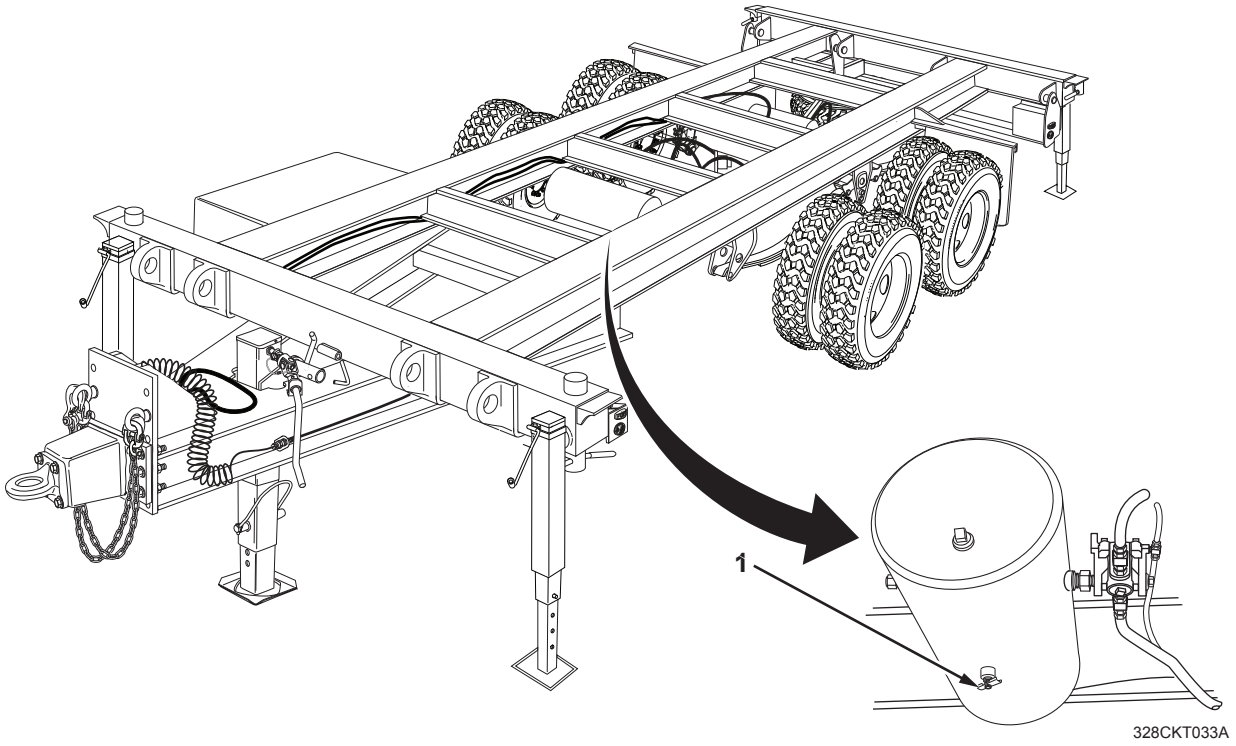


Figure 1. Drain Valve Replacement.

END OF TASK

FOLLOW-ON TASKS

1. Connect trailer to prime mover (WP 0005).
2. Pressurize air reservoir tanks (WP 0005).
3. Inspect for air leaks at drain valves (WP 0072).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
AIR RESERVOIR TANKS REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Locknut Qty: 4 (WP 0085, Figure 9, Item 12)
Lockwasher Qty: 4 (WP 0085, Figure 9, Item 1)

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover (WP 0005)
Air lines and hoses disconnected at air reservoir tanks (WP 0051)
Relay valve and trailer valve removed (WP 0053)
Drain valves removed (WP 0054)

NOTE

There are two air reservoir tanks. Both are removed and installed the same way. This procedure covers one air reservoir tank.

REMOVAL

1. Remove four locknuts (Figure 1, Item 6), screws (Figure 1, Item 1), lockwashers (Figure 1, Item 2), and eight flat washers (Figure 1, Item 4). Discard locknuts (Figure 1, Item 6) and lockwashers (Figure 1, Item 2).
2. Remove air reservoir tank (Figure 1, Item 3) from trailer frame (Figure 1, Item 5).

END OF TASK

INSTALLATION

1. Install air reservoir tank (Figure 2, Item 3) on trailer frame (Figure 2, Item 5).
2. Install eight flat washers (Figure 2, Item 4), four new lockwashers (Figure 2, Item 2), new locknuts (Figure 2, Item 6), and screws (Figure 2, Item 1).

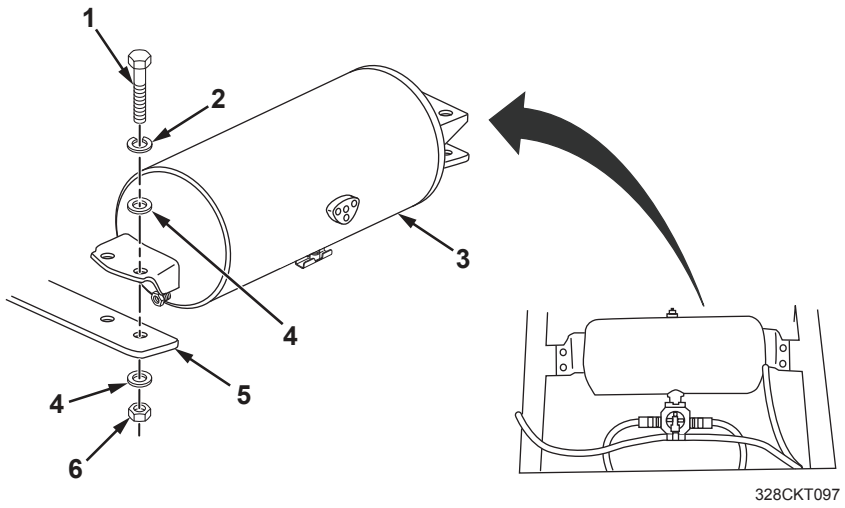


Figure 1. Air Reservoir Tanks Removal.

END OF TASK

FOLLOW-ON TASKS

1. Install drain valves on air reservoir tank (WP 0054).
2. Install relay valve and trailer valve on air reservoir tank (WP 0053).
3. Connect air lines and hoses to air reservoir tank (WP 0051).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
HUB MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)
Ratchet, 1 in. Drive
(WP 0109, Table 1, Item 7)
Socket, 2-5/8 in., 1 in. Drive
(WP 0109, Table 1, Item 11)
Torque Wrench, 3/4 in. Drive, 0 to 600 lb-ft
(0 to 813 N•m)
(WP 0109, Table 1, Item 19)
Torque Wrench, 1 in. Drive, 200 to 1,000 lb-ft
(271 to 1,356 N•m)
(WP 0109, Table 1, Item 20)

Materials/Parts
Brush, Scrub (WP 0108, Table 1, Item 4)
Cleaning Solvent, Type II
(WP 0108, Table 1, Item 5)
Lockwasher (WP 0086, Figure 10, Item 12)
Keywasher (WP 0086, Figure 10, Item 10)
Machine Screw Qty: AR
(WP 0086, Figure 10, Item 6)
O-ring (WP 0086, Figure 10, Item 13)
Oil, Lubricating, Gear
(WP 0108, Table 1, Item 13)

Materials/Parts (cont.)
Rag, Wiping (WP 0108, Table 1, Item 15)
Seal (WP 0086, Figure 10, Item 1)
Stud, Self-locking Qty: 8
(WP 0086, Figure 10, Item 5)

Personnel Required
(2)

References
WP 0046
WP 0047

Equipment Condition
Wheels chocked (WP 0005)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)
Air reservoir tanks drained (WP 0005)
Spring brake chamber caged (WP 0035)
Wheel and tire assembly removed (WP 0033)

WARNING

Hub and drum assembly weighs 90 lb (40.8 kg). Assistance will be needed to perform this procedure. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

NOTE

There are four hubs which are removed and installed the same way. This procedure covers one hub.

REMOVAL

1. Loosen slack adjuster to release pressure on service brakes (WP 0047) at hub being removed.
2. Remove hub cap (Figure 1, Item 17), O-ring (Figure 1, Item 16), and protective plug (Figure 1, Item 18). Discard O-ring (Figure 1, Item 16).
3. Remove outer spindle nut (Figure 1, Item 15).
4. Remove lockwasher (Figure 1, Item 14). Discard lockwasher (Figure 1, Item 14).
5. Loosen inner spindle nut (Figure 1, Item 13) until inner spindle nut (Figure 1, Item 13) is flush with outside edge of hub (Figure 1, Item 9).

WARNING

Wear eye protection when removing and installing force fitted parts, such as bearings, to prevent parts that may fly off from hitting your face. Failure to comply may result in personnel injury. Seek medical attention in case of injury.

NOTE

The hub and brake drum assembly consists of keywasher, outer bearing cone, outer bearing cup, hub, eight screws, eight self-locking studs, drum, inner bearing cup, inner bearing cone, and seal.

6. Move hub and drum assembly (Figure 1, Items 3 through 13) as one piece along axle (Figure 1, Item 1) and spindle (Figure 1, Item 2), and against inner spindle nut (Figure 1, Item 13).
7. Remove inner spindle nut (Figure 1, Item 13), keywasher (Figure 1, Item 12), outer bearing cone (Figure 1, Item 11), and outer bearing cup (Figure 1, Item 10). Discard keywasher (Figure 1, Item 12).
8. Remove inner bearing cup (Figure 1, Item 5), inner bearing cone (Figure 1, Item 4), and hub (Figure 1, Item 9) from spindle (Figure 1, Item 2).

REMOVAL - Continued

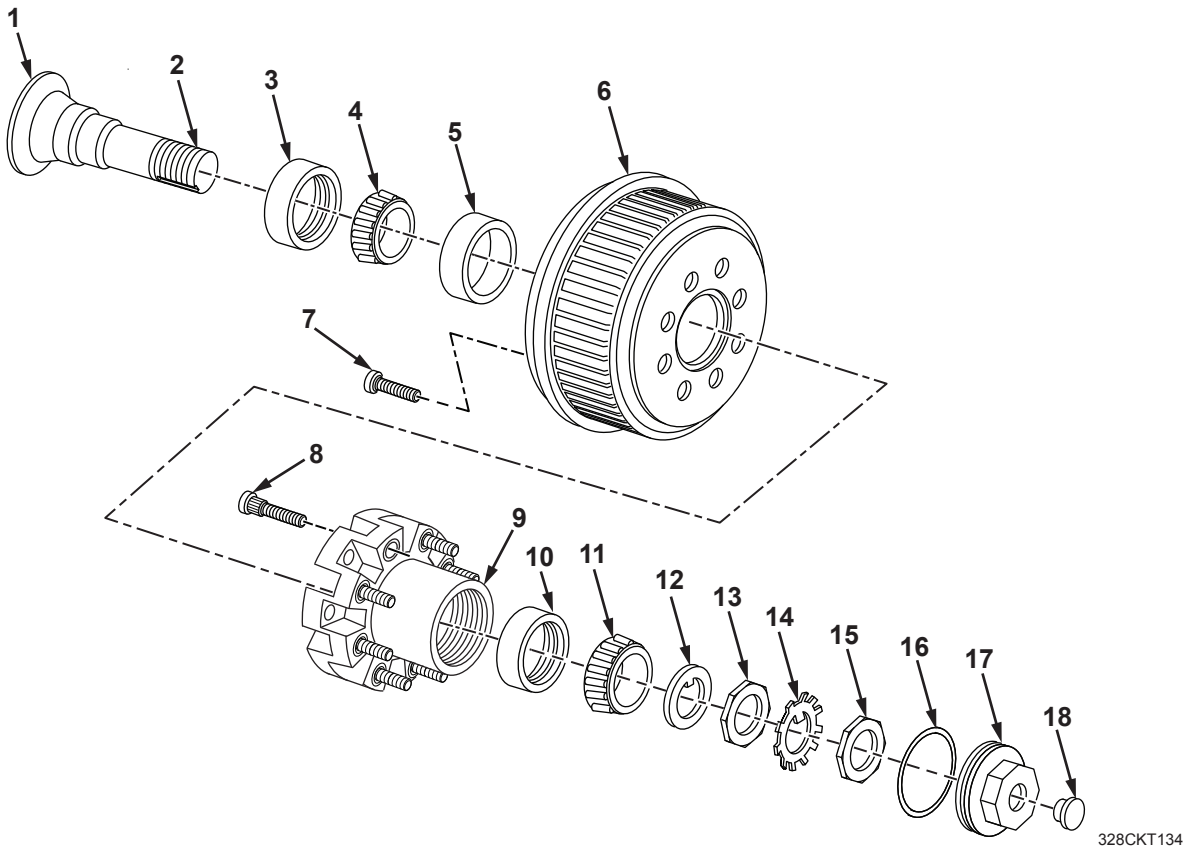


Figure 1. Hub and Brake Drum Assembly Removal.

END OF TASK

CLEANING

WARNING

- Solvent cleaning compound MIL-PRF-680 may be irritating to the eyes and skin. Wear protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Use solvent cleaning compound MIL-PRF-680 in a well-ventilated area. Use respirator as needed. Accidental ingestion can cause irritation of digestive tract and respiratory tract. May cause lung and central nervous system damage. Can be fatal if swallowed. Inhalation of high/massive concentrations can cause coma or be fatal. First aid for ingestion: DO NOT induce vomiting. Seek immediate medical attention. First aid for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- MIL-PRF-680 solvent is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Improper cleaning methods and use of unauthorized cleaning liquids or solvents can injure personnel and damage equipment. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of in accordance with authorized facility procedures. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

1. Clean inner bearing cone (Figure 2, Item 3), brake drum (Figure 2, Item 4), outer bearing cone (Figure 2, Item 5), inner spindle nut (Figure 2, Item 6), outer spindle nut (Figure 2, Item 7), hub cap (Figure 2, Item 8), and protective plug (Figure 2, Item 9) thoroughly using a brush and cleaning solvent. Allow to air dry.
2. Clean spindle (Figure 2, Item 2) on axle (Figure 2, Item 1) with clean wiping rag.

CLEANING - Continued

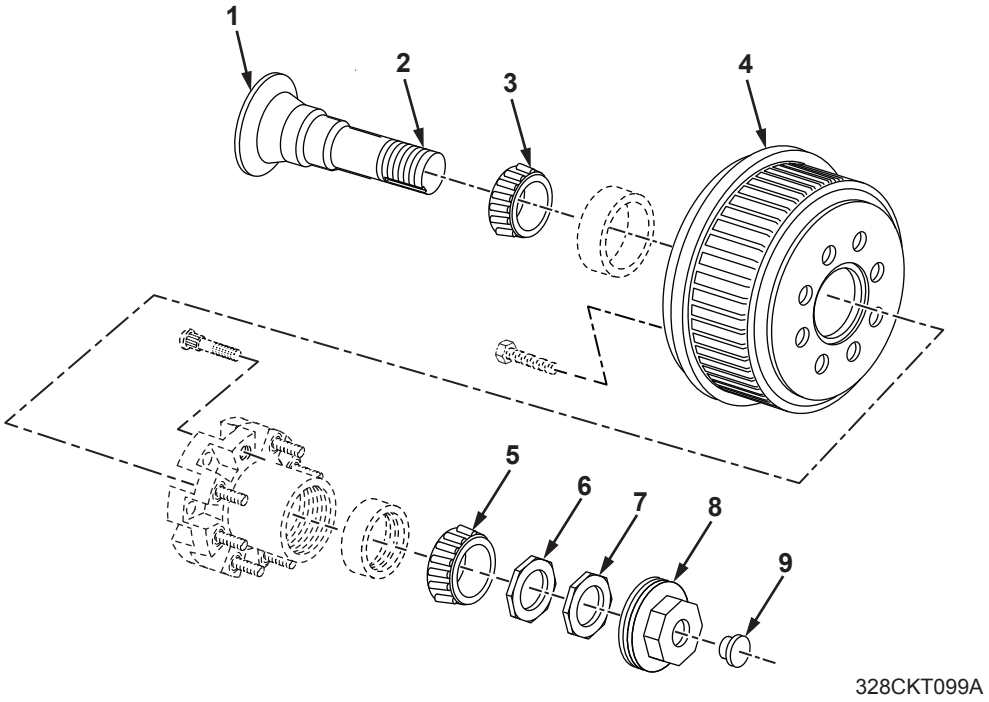


Figure 2. Hub and Brake Drum Cleaning.

END OF TASK

INSPECTION

1. Inspect seal (Figure 3, Item 3) inside hub (Figure 3, Item 9) for wear, scoring, overheating (discoloration), or other damage.

NOTE

If seal is damaged, proceed to Step 2. If no damage is present, proceed to Step 3.

2. Remove and discard seal (Figure 3, Item 3).
3. Remove eight screws (Figure 3, Item 7) and brake drum (Figure 3, Item 6) from hub (Figure 3, Item 9). Discard screws (Figure 3, Item 7).
4. Inspect eight self-locking studs (Figure 3, Item 8) on hub (Figure 3, Item 9) for cracks, distortion or missing parts.

NOTE

If self-locking studs and/or screws are damaged proceed to Step 5. If no damage is present, proceed to Step 6.

5. Remove damaged self-locking studs (Figure 3, Item 7). Discard damaged self-locking studs (Figure 3, Item 7).
6. Inspect bearing cup (Figure 3, Item 10), outer bearing cone (Figure 3, Item 11), inner bearing cone (Figure 3, Item 4), and inner bearing cup (Figure 3, Item 5) for wear, scoring, flat spots, and overheating (discoloration). Remove and discard damaged parts.
7. Inspect brake drum (Figure 3, Item 6) visually for deep scoring, excessive wear (ridge) and other irregularities. Remove and discard damaged brake drum (Figure 3, Item 6).
8. Inspect inner spindle nut (Figure 3, Item 12) and outer spindle nut (Figure 3, Item 13) for cracks and damage. Discard damaged parts.
9. Inspect hub cap (Figure 3, Item 14), protective plug (Figure 3, Item 15), and hub (Figure 3, Item 9) for cracks, damage, or missing parts. Discard damaged parts.
10. Inspect spindle (Figure 3, Item 2) for damaged threads, evidence of seizure, and rough surfaces. If spindle (Figure 3, Item 2) is damaged, replace axle (WP 0046).
11. Inspect axle (Figure 3, Item 1) for damage. If axle (Figure 3, Item 1) is damaged, replace axle (WP 0046).

INSPECTION - Continued

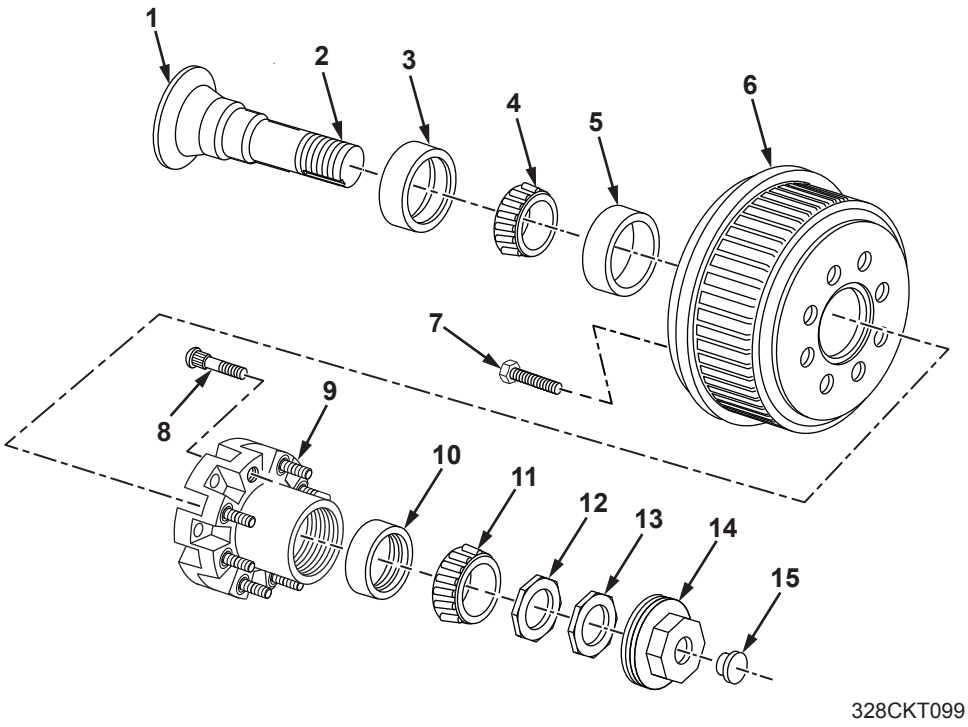


Figure 3. Hub and Brake Drum Inspection.

END OF TASK

INSTALLATION

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

1. Install new self-locking studs (Figure 4, Item 8) in hub (Figure 4, Item 9) if removed.
2. Install and seat inner bearing cup (Figure 4, Item 5) in hub (Figure 4, Item 9) with narrow edge of inner bearing cup (Figure 4, Item 5) facing outward.
3. Apply a light coating of gear oil to inner bearing cone (Figure 4, Item 4) and install in hub (Figure 4, Item 9).

NOTE

Ensure a proper fit of seal on spindle. The correct seal will not go any further than the first rubber rib due to designed interference.

4. Install seal (Figure 4, Item 3) on hub (Figure 4, Item 9) with the words "OIL SIDE" facing inward. Ensure seal (Figure 4, Item 3) is straight and installed in hub (Figure 4, Item 9) until seal bottoms out.
5. Apply a light coating of gear oil to outer bearing cone (Figure 4, Item 11). Install outer bearing cup (Figure 4, Item 10) and outer bearing cone (Figure 4, Item 11) in hub (Figure 4, Item 9).
6. Install brake drum (Figure 4, Item 6) on hub (Figure 4, Item 9) with eight new self-locking screws (Figure 4, Item 7). Torque self-locking screws (Figure 4, Item 7) to 100 to 125 lb-ft (135 to 169 N•m).

CAUTION

Ensure seal does not hit spindle while installing hub on wheel end. The seal could be damaged if it strikes the spindle.

7. Apply a light coat of gear oil on seal (Figure 4, Item 3).
8. Install hub (Figure 4, Item 9) and brake drum (Figure 4, Item 6) on spindle (Figure 4, Item 2).
9. Install new keywasher (Figure 4, Item 12) and inner spindle nut (Figure 4, Item 13) on spindle (Figure 4, Item 2) and tighten nut (Figure 4, Item 13) while turning brake drum (Figure 4, Item 6) by hand.
10. Torque inner spindle nut (Figure 4, Item 13) to a minimum torque of 100 lb-ft (135 N•m) while turning hub (Figure 4, Item 9).
11. Loosen inner spindle nut (Figure 4, Item 13) 1/4 to 3/8 turn to remove preload torque. Hand-tighten inner spindle nut (Figure 4, Item 13). DO NOT rotate the hub (Figure 4, Item 9).
12. Install new lockwasher (Figure 4, Item 14) and bend one tab down on the inner spindle nut (Figure 4, Item 13).
13. Install outer spindle nut (Figure 4, Item 15). Tighten outer spindle nut (Figure 4, Item 15) and apply torque of 225 to 250 lb-ft (305 to 339 N•m).
14. Bend two locking tabs on lockwasher (Figure 4, Item 14) over outer spindle nut (Figure 4, Item 15).

INSTALLATION - Continued

15. Install new O-ring (Figure 4, Item 16) and hub cap (Figure 4, Item 17).
16. Rotate brake drum (Figure 4, Item 6) on spindle (Figure 4, Item 2) and axle (Figure 4, Item 1) to assure free movement without binding.
17. Fill hub (Figure 4, Item 9) with gear oil to full line on hub cap (Figure 4, Item 17).
18. Install protective plug (Figure 4, Item 18).

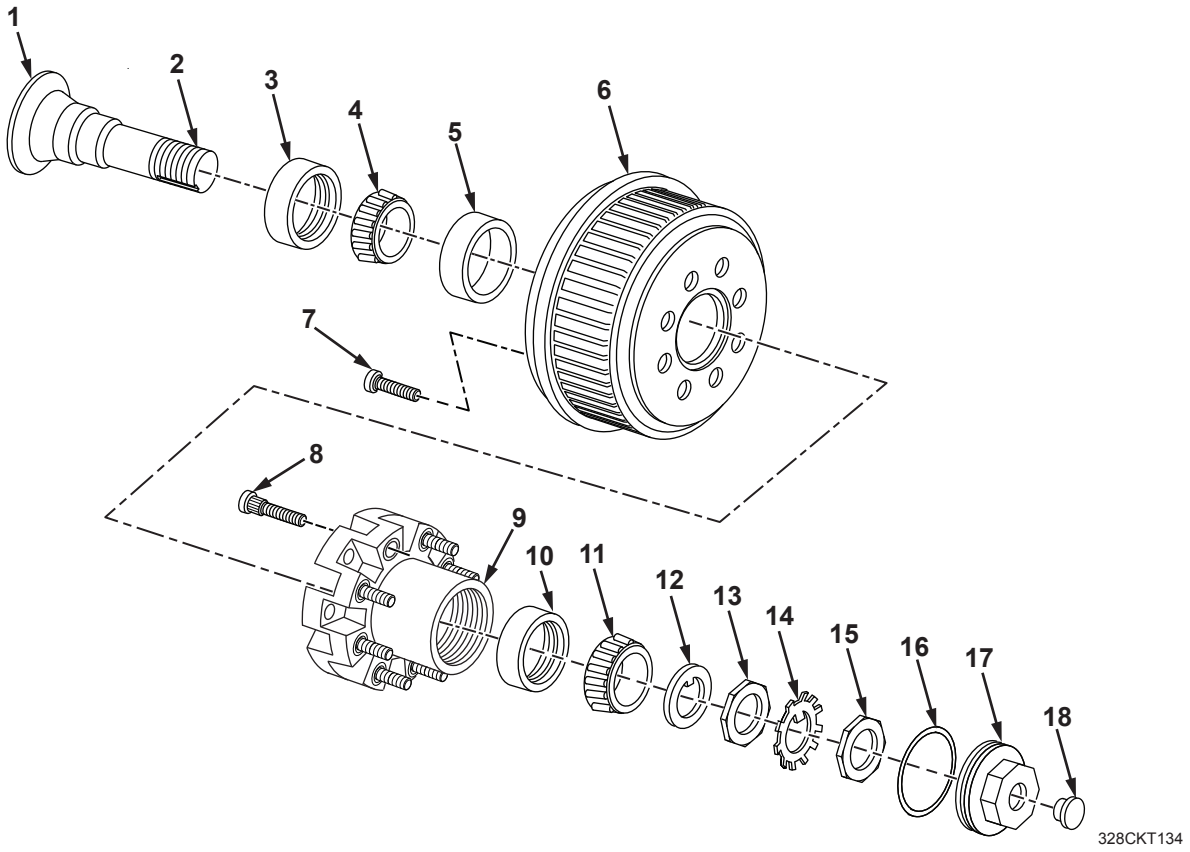


Figure 4. Hub and Brake Drum Assembly Installation.

END OF TASK

FOLLOW-ON TASKS

1. Install wheel and tire assembly (WP 0033).
2. Torque wheel and tire assembly lug nuts to 225 to 250 lb-ft (305 to 339 N•m) (WP 0047).
3. Uncage spring brake chamber (WP 0035).
4. Adjust brakes (WP 0047).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
WHEEL AND TIRE ASSEMBLY MAINTENANCE

INITIAL SETUP:

References
TM 9-2610-200-14

Refer to TM 9-2610-200-14 for instructions on tire maintenance.

END OF WORK PACKAGE

FIELD MAINTENANCE
FRAME REPAIR

INITIAL SETUP:

References
TB 9-2510-242-40

Refer to TB 9-2510-242-40 for repair of frame.

END OF WORK PACKAGE

FIELD MAINTENANCE
MUD FLAPS REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Locknut Qty: 4 (WP 0088, Figure 12, Item 3)

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)

NOTE

There are two mud flaps and they are both removed and installed the same way. This procedure covers one mud flap.

REMOVAL

1. Remove four locknuts (Figure 1, Item 3), flat washers (Figure 1, Item 4), capscrews (Figure 1, Item 1), and mounting plate (Figure 1, Item 2). Discard locknuts (Figure 1, Item 3).
2. Remove mud flap (Figure 1, Item 5).

END OF TASK

INSTALLATION

Install mud flap (Figure 1, Item 5) and mounting plate (Figure 1, Item 2) with four capscrews (Figure 1, Item 1), flat washers (Figure 1, Item 4) and new locknuts (Figure 1, Item 3).

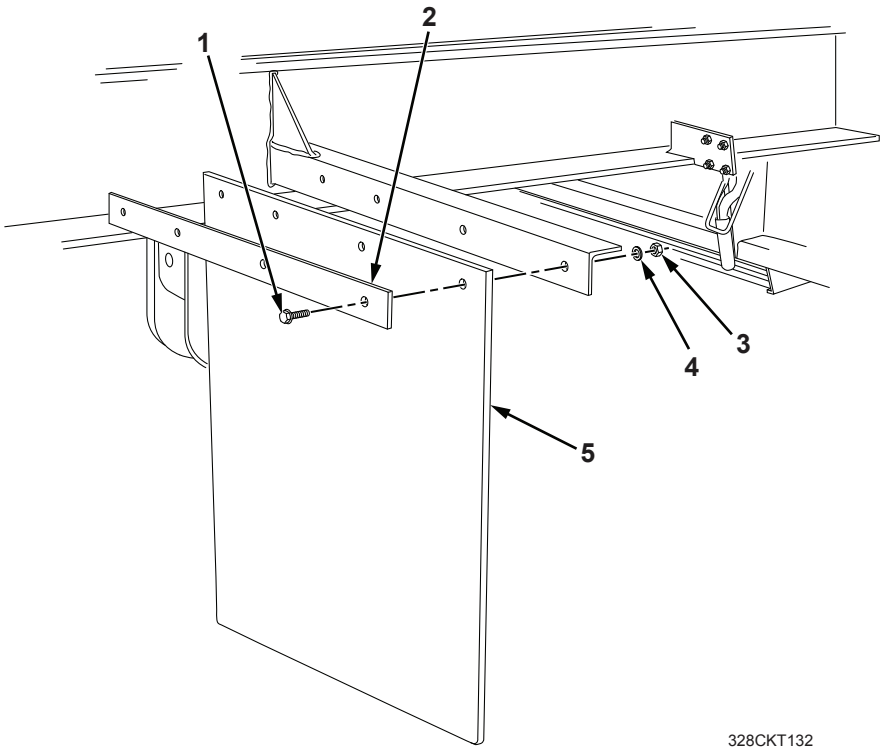


Figure 1. Mud Flap Removal and Installation.

END OF TASK

FOLLOW-ON TASK

Connect trailer to prime mover (WP 0005).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
BUMPER REPLACEMENT (XCK2000E1)

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Grease, Automotive and Artillery (GAA)
(WP 0108, Table 1, Item 11)
Rag, Wiping (WP 0108, Table 1, Item 15)
Spring Pin Qty: 4 (WP 0089, Figure 13, Item 6)

Personnel Required
(3)

References
TM 9-4910-783-13&P

References (cont.)
TM 10-7360-226-13&P
WP 0069

Equipment Condition
Wheels chocked (WP 0005)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)
Rear bumper clamps removed (WP 0069)
Rear lights removed (WP 0041)
Clearance lights removed (WP 0042)
Reflectors removed (WP 0066)

WARNING

- Suitable support devices must be positioned directly under bumper to prevent slippage or falling. Suitable support devices must be used only on a hard, level surface to prevent shifting. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Bumper weighs approximately 90 lb (41 kg). Assistance will be needed to perform this procedure. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Wear eye protection when removing and installing springs and spring pins to prevent them from flying off and hitting your face. Failure to comply may result in personnel injury. Seek medical attention in case of injury.

CAUTION

This task can be completed in a safer manner if the container is removed from the trailer prior to starting the task. Refer to TM 9-4910-783-13&P or TM 10-7360-226-13&P.
If the mission does not permit the removal of container, extra caution and support are required. The trailer may shift. Failure to comply may cause equipment damage.

REMOVAL

1. Remove four spring pins (Figure 1, Item 6), headed pins (Figure 1, Item 5), and bumper (Figure 1, Item 1). Discard spring pins (Figure 1, Item 6).

NOTE

Perform Step 2 only if grease fittings are damaged or not functioning properly.

2. Remove four grease fittings (Figure 1, Item 7) from bumper (Figure 1, Item 1).

NOTE

Perform Step 3 only if the sleeve swaging, wire rope, or lockpin have been damaged.

3. Remove sleeve swaging (Figure 1, Item 2), wire rope (Figure 1, Item 3), and lockpin (Figure 1, Item 4).

END OF TASK

INSTALLATION

1. If removed, install four grease fittings (Figure 1, Item 7) on bumper (Figure 1, Item 1).
2. Install bumper (Figure 1, Item 1) with four headed pins (Figure 1, Item 5) and four new spring pins (Figure 1, Item 6).

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

3. Lubricate headed pins (Figure 1, Item 5) with grease. Wipe off excess grease.

NOTE

Perform Step 4 only if the sleeve swaging, wire rope, or lockpin have been removed.

4. If removed, install wire rope (Figure 1, Item 3) with lockpin (Figure 1, Item 4) and sleeve swaging (Figure 1, Item 2) on bumper (Figure 1, Item 1).

INSTALLATION - Continued

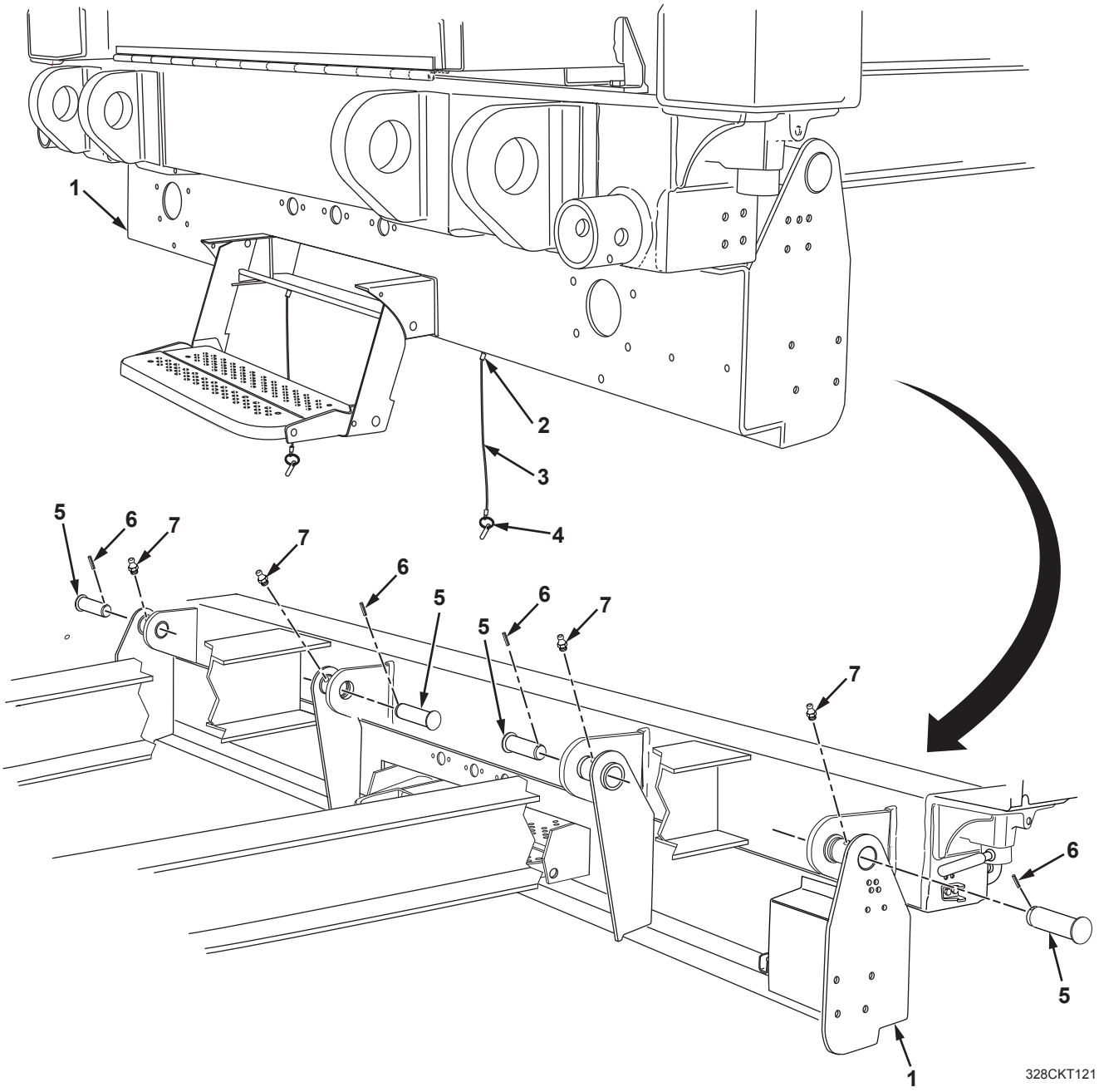


Figure 1. Bumper (XCK2000E1) Removal and Installation.

END OF TASK

FOLLOW-ON TASKS

1. Install reflectors (WP 0066).
2. Install clearance lights (WP 0042).
3. Install rear lights (WP 0041).
4. Install rear bumper clamps (WP 0069).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
LUNETTE ASSEMBLY REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)
Socket,1-1/8 in., 3/4 in. drive
(WP 0109, Table 1, Item 9)
Torque Wrench 0 to 600 lb-ft (0 to 813 N•m)
(WP 0109, Table 1, Item 19)

Materials/Parts
Lockwasher Qty: 6 (WP 0090, Figure 14, Item 2)
Lockwasher Qty: 4 (WP 0090, Figure 14, Item 4)

Personnel Required
(2)

Equipment Condition
Wheels chocked (WP 0005)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)

WARNING

- Suitable support devices must be positioned directly under lunette to prevent slippage or falling. Suitable support devices must be used only on a hard, level surface to prevent shifting. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Lunette weighs 75 lb (34 kg). Assistance will be needed to perform this procedure. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

REMOVAL

1. Remove six hex nuts (Figure 1, Item 9), lockwashers (Figure 1, Item 10), 12 flat washers (Figure 1, Item 8), and six cap screws (Figure 1, Item 7). Discard lockwashers (Figure 1, Item 8).
2. Remove lunette coupler (Figure 1, Item 4) and bracket (Figure 1, Item 3).
3. Remove four hex nuts (Figure 1, Item 1), lockwashers (Figure 1, Item 2), flat washers (Figure 1, Item 6), and screws (Figure 1, Item 5) from lunette coupler (Figure 1, Item 4). Discard lockwashers (Figure 1, Item 2).
4. Remove lunette coupler (Figure 1, Item 4) from bracket (Figure 1, Item 3).

END OF TASK

INSTALLATION

1. Secure lunette coupler (Figure 1, Item 4) to bracket (Figure 1, Item 3) with four flat washers (Figure 1, Item 6), screws (Figure 1, Item 5), new lockwashers (Figure 1, Item 2), and hex nuts (Figure 1, Item 1).
2. Mount lunette coupler (Figure 1, Item 4) and bracket (Figure 1, Item 3) on frame with six hex nuts (Figure 1, Item 9), new lockwashers (Figure 1, Item 10), 12 flat washers (Figure 1, Item 8), and six cap screws (Figure 1, Item 7). Torque hex nuts to 300 lb-ft (407 N•m).

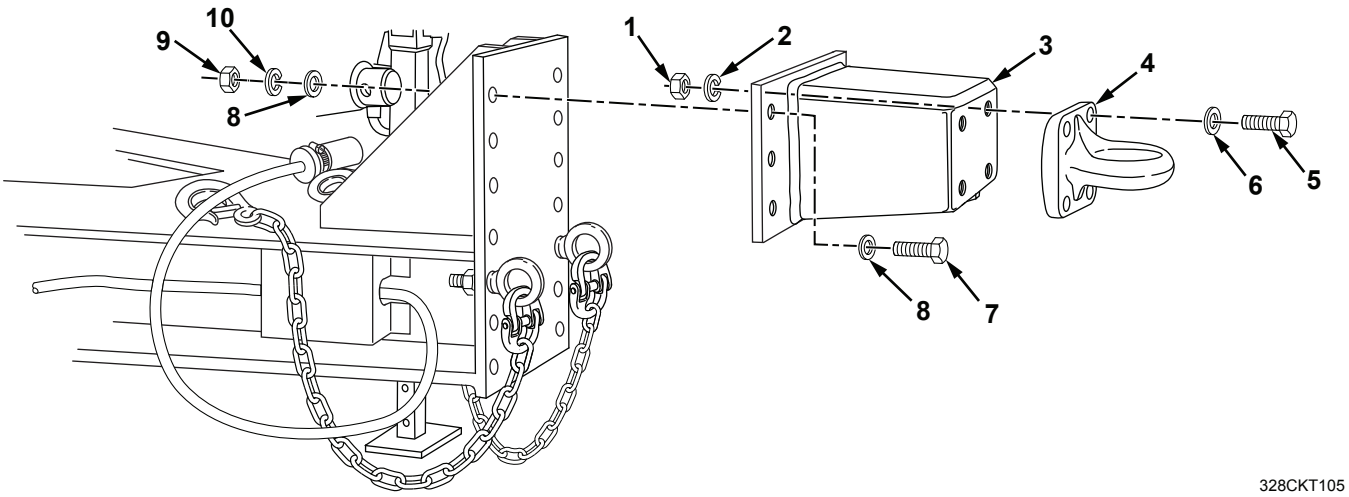


Figure 1. Lunette Removal and Installation.

END OF TASK

FOLLOW-ON TASK

Connect trailer to prime mover (WP 0005).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
SAFETY CHAINS REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)
Torque Wrench, 3/8 in. drive,
0 to 75 lb-ft (0 to 102 N•m)
(WP 0109, Table 1, Item 18)

Materials/Parts
Locknut (WP 0090, Figure 14, Item 14)

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)

NOTE

There are two safety chains which are removed and installed the same way. The following procedures cover one safety chain.

REMOVAL

Remove locknut (Figure 1, Item 1), eyebolt (Figure 1, Item 2), and safety chain (Figure 1, Item 3). Discard locknut (Figure 1, Item 1).

END OF TASK

INSTALLATION

Mount safety chain (Figure 1, Item 3) to frame with eye bolt (Figure 1, Item 2) and new locknut (Figure 1, Item 1). Torque new locknut (Figure 1, Item 1) to 30 lb-ft (41 N•m).

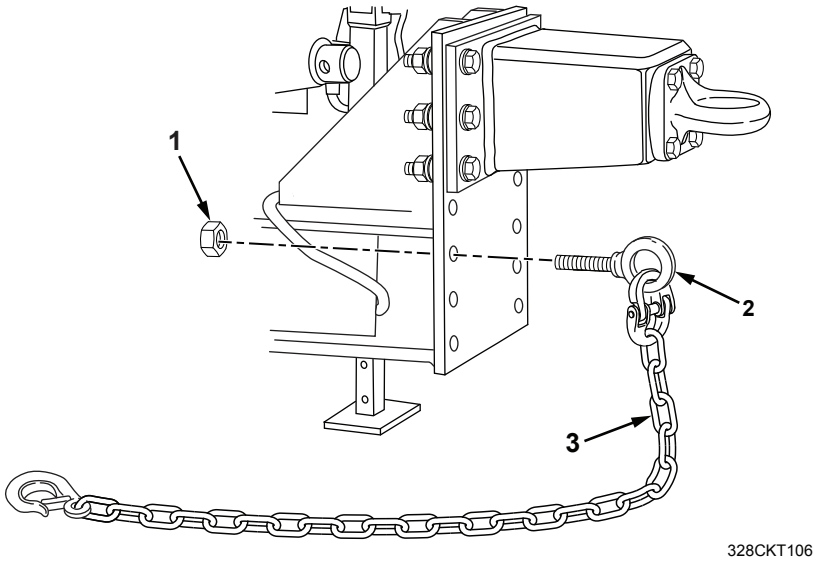


Figure 1. Safety Chain Removal and Installation.

END OF TASK

FOLLOW-ON TASK

Connect trailer to prime mover (WP 0005).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
SPARE WHEEL CARRIER AND TIRE LOCK REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)
Torque Wrench, 3/8 in. Drive, 0 to 75 lb-ft
(0 to 102 N•m) (WP 0109, Table 1, Item 18)

Materials/Parts
Locknut Qty: 2 (WP 0091, Figure 15, Item 7)
Retaining Ring (WP 0091, Figure 15, Item 8)

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)
Spare tire removed (WP 0034)

WARNING

Wear eye protection when removing and installing retaining rings to prevent them from flying off and hitting your face. Failure to comply may result in personnel injury. Seek medical attention in case of injury.

REMOVAL

NOTE

After spare tire is removed, keep lug nuts with spare tire carrier.

1. Remove two locknuts (Figure 1, Item 8), flat washers (Figure 1, Item 7), and bolts (Figure 1, Item 6). Remove spare tire carrier (Figure 1, Item 2). Discard locknuts (Figure 1, Item 8).

NOTE

Support bracket is welded to frame and cannot be removed.

2. Remove retaining ring (Figure 1, Item 5) and pin (Figure 1, Item 1) from shaft (Figure 1, Item 4). Discard retaining ring (Figure 1, Item 5).
3. Remove shaft (Figure 1, Item 4) from spare tire carrier (Figure 1, Item 2) and support bracket (Figure 1, Item 3).

END OF TASK

INSTALLATION

1. Slide shaft (Figure 1, Item 4) into support bracket (Figure 1, Item 3) on frame and onto spare tire carrier (Figure 1, Item 2). Install pin (Figure 1, Item 1) and new retaining ring (Figure 1, Item 5).
2. Install two bolts (Figure 1, Item 6), flat washers (Figure 1, Item 7), and new locknuts (Figure 1, Item 8) on spare tire carrier (Figure 1, Item 2). Torque locknuts (Figure 1, Item 9) to 30 lb-ft (41 N•m).

INSTALLATION - Continued

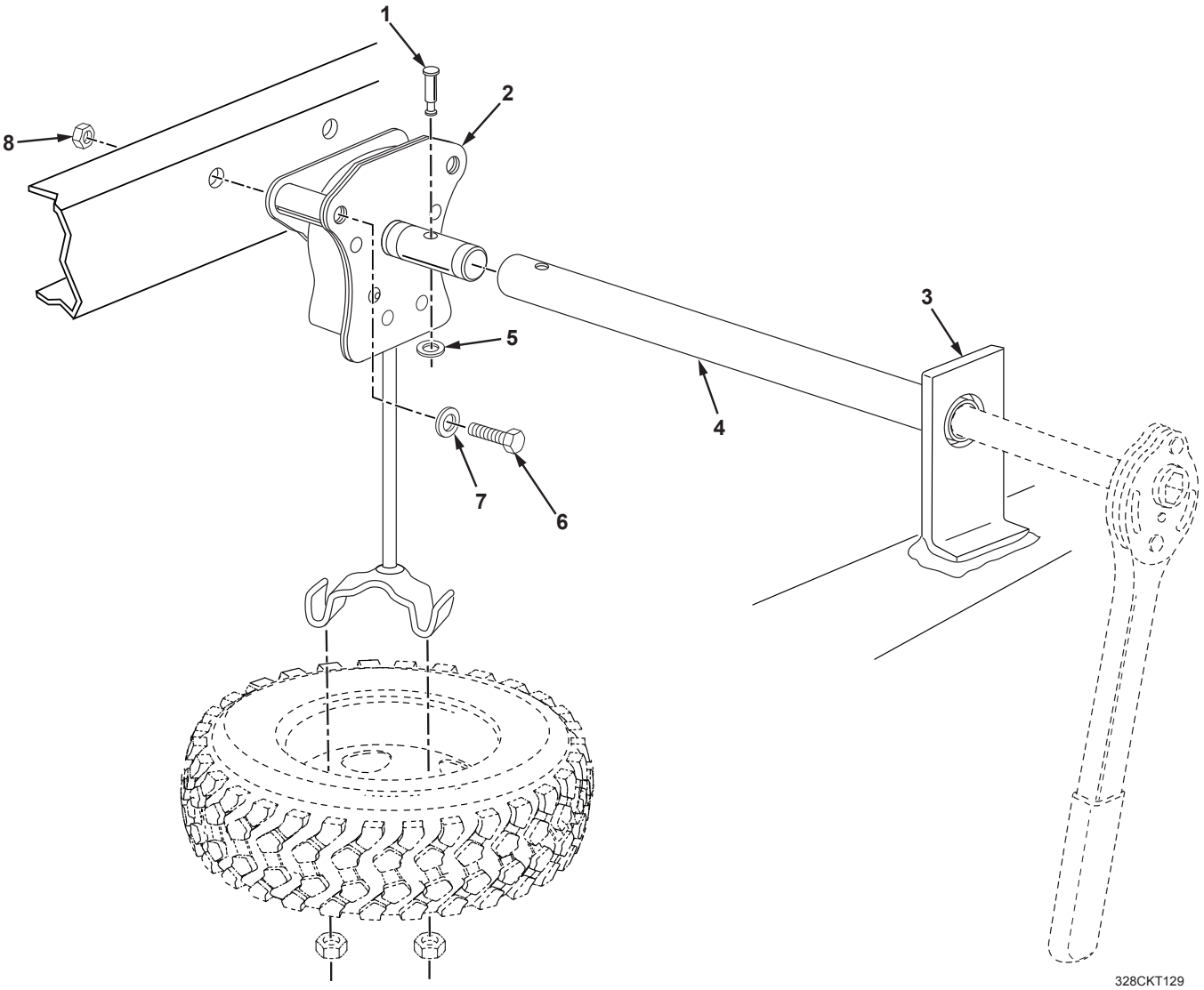


Figure 1. Spare Wheel Carrier and Tire Lock Removal and Installation.

END OF TASK

FOLLOW-ON TASK

Install spare tire (WP 0034).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
LANDING LEG MAINTENANCE (XCK2000E1)

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Lockwasher (WP 0093, Figure 17, Item 7)
Locknut Qty: 2 (WP 0093, Figure 17, Item 19)

Personnel Required
(2)

Equipment Condition
Wheels chocked (WP 0005)
Landing leg down (WP 0005)

WARNING

- Suitable support devices must be positioned under the lunette to prevent the trailer from dropping. Suitable support devices with a minimum rating of 30,000 lb (13,608 kg) and assistance will be needed to perform this task. Suitable support devices must be used only on a hard, level surface to prevent shifting or dropping. The trailer wheels must be chocked. Direct all other personnel to stay clear of the trailer while landing leg is removed. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.
- Landing leg weighs 95 lb (43 kg) and must be supported to prevent it from falling. Suitable lifting device rated at a minimum of 150 lb (68 kg) and assistance will be needed to perform this procedure. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

REMOVAL

1. Secure trailer with suitable support device.
2. Raise landing leg (Figure 1, Item 1) 1/2 in. to 1 in. off the ground (WP 0005).
3. Remove pin (Figure 1, Item 5) from hand crank U-joint (Figure 1, Item 2).
4. Loosen two thumb screws (Figure 1, Item 4) and remove hand crank assembly (Figure 1, Item 3) from trailer.

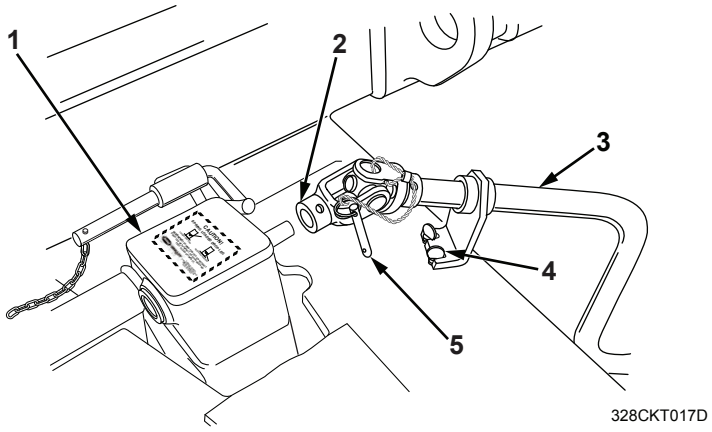


Figure 1. Landing Leg Hand Crank Assembly Removal.

5. Remove locknut (Figure 2, Item 2) and screw (Figure 2, Item 4). Discard locknut (Figure 2, Item 2).
6. Remove securing pin (Figure 2, Item 3) and landing leg (Figure 2, Item 1).

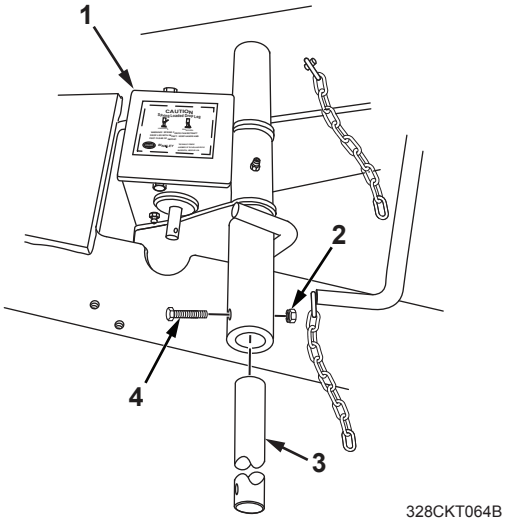


Figure 2. Landing Leg Removal.

END OF TASK

DISASSEMBLY

NOTE

- Only perform disassembly if these parts are damaged or not functioning properly.
- There are four grease fittings. One grease fitting is on the U-joint, one grease fitting is on the hand crank bracket, and two grease fittings are on the landing leg.

1. Remove grease fitting (Figure 3, Item 3) from U-joint (Figure 3, Item 4).
2. Remove grease fitting (Figure 3, Item 8) from hand crank bracket (Figure 3, Item 11).
3. Remove setscrew (Figure 3, Item 5) and U-joint (Figure 3, Item 4) from hand crank (Figure 3, Item 9).
4. Remove wire rope (Figure 3, Item 12) and pin (Figure 3, Item 13) from hand crank (Figure 3, Item 9).
5. Remove two thumb screws (Figure 3, Item 10).
6. Remove bolt (Figure 3, Item 7), lockwasher (Figure 3, Item 6), and bracket (Figure 3, Item 11) from hand crank (Figure 3, Item 9). Discard lockwasher (Figure 3, Item 6).
7. Remove lockpin (Figure 3, Item 1) and chain (Figure 3, Item 2).

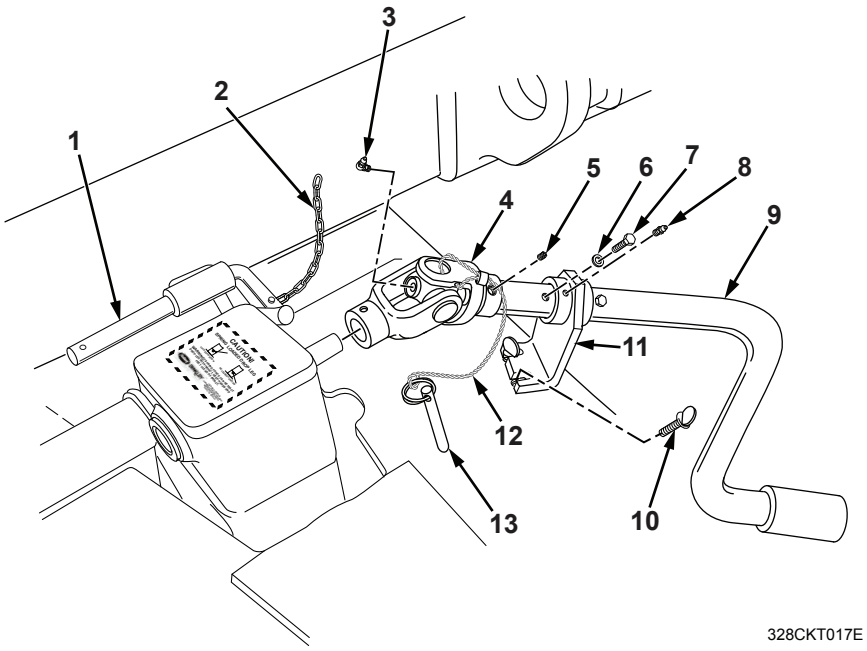


Figure 3. Landing Leg Hand Crank Disassembly.

DISASSEMBLY - Continued

8. Remove two grease fittings (Figure 4, Items 2 and 8) from landing leg (Figure 4, Item 9).
9. Remove lockpin (Figure 4, Item 7), chain (Figure 4, Item 6), and pin (Figure 4, Item 5).
10. Remove locknut (Figure 4, Item 3), screw (Figure 4, Item 4), and leverage assist handle (Figure 4, Item 1). Discard locknut (Figure 4, Item 3).

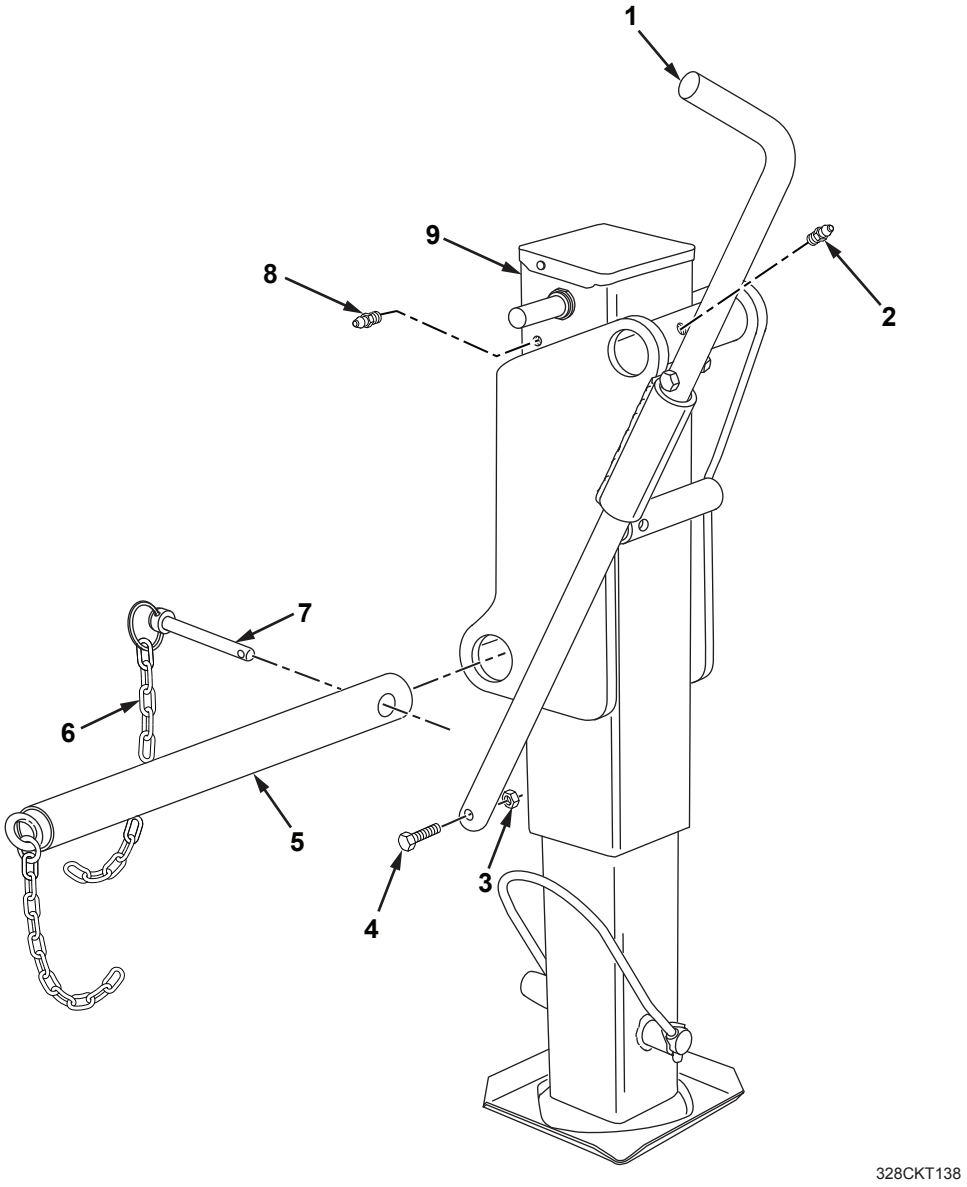


Figure 4. Landing Leg Disassembly.

END OF TASK

ASSEMBLY

NOTE

Only perform assembly if these parts have been removed.

1. Install leverage assist handle (Figure 5, Item 1) on landing leg (Figure 5, Item 9) and secure with screw (Figure 5, Item 4) and new locknut (Figure 5, Item 3).
2. Install pin (Figure 5, Item 5) in landing leg (Figure 5, Item 9) and secure with lockpin (Figure 5, Item 7) and chain (Figure 5, Item 6).
3. Install two grease fittings (Figure 5, Items 2 and 8) on landing leg (Figure 5, Item 9).

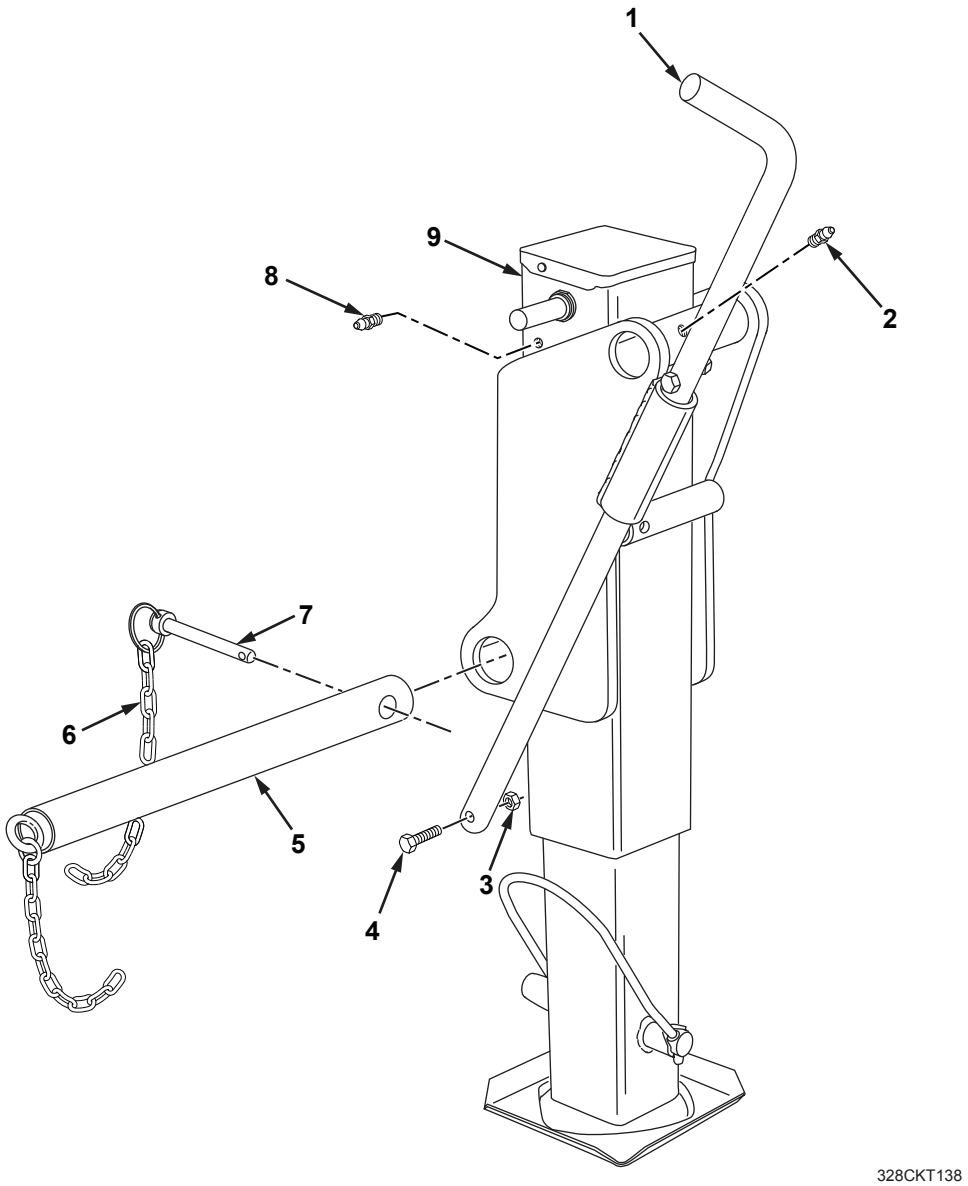


Figure 5. Landing Leg Assembly.

ASSEMBLY - Continued

4. Install lockpin (Figure 6, Item 1) and chain (Figure 6, Item 2).
5. Install bracket (Figure 6, Item 11) on hand crank (Figure 6, Item 9) and secure with new lockwasher (Figure 6, Item 6) and bolt (Figure 6, Item 7).
6. Install two thumb screws (Figure 6, Item 10).
7. Install wire rope (Figure 6, Item 12) and pin (Figure 6, Item 13) on hand crank (Figure 6, Item 9).
8. Install U-joint (Figure 6, Item 4) with setscrew (Figure 6, Item 5) on hand crank (Figure 6, Item 9).
9. Install grease fitting (Figure 6, Item 8) on hand crank bracket Figure 6, Item 11).
10. Install grease fitting (Figure 6, Item 3) on U-joint (Figure 6, Item 4).

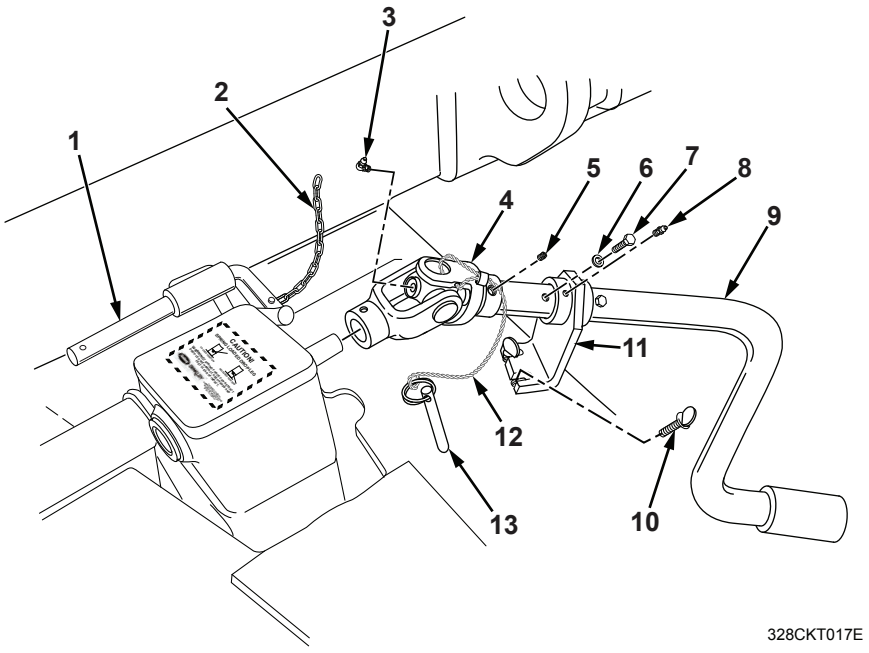


Figure 6. Landing Leg Hand Crank Assembly.

END OF TASK

INSTALLATION

1. Place landing leg (Figure 7, Item 1) in proper position by aligning landing leg support tube (Figure 7, Item 3) with support tubes (Figure 7, Items 2 and 4) welded to trailer frame.
2. Install securing pin (Figure 7, Item 6).
3. Install screw (Figure 7, Item 7) and secure with new locknut (Figure 7, Item 5).

INSTALLATION - Continued

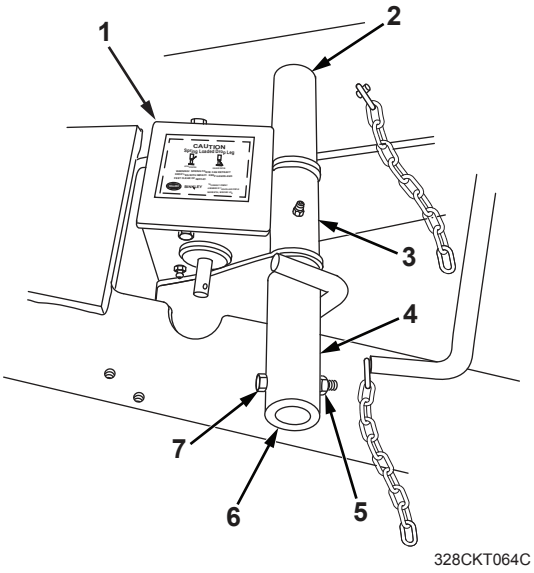


Figure 7. Landing Leg Installation and Alignment.

4. Install hand crank assembly U-joint (Figure 8, Item 2) on landing leg (Figure 8, Item 1) and secure with safety pin (Figure 8, Item 5).
5. Slide hand crank bracket (Figure 8, Item 3) under thumb screws (Figure 8, Item 4) on trailer frame. Tighten thumb screws (Figure 8, Item 4).
6. Check operation of landing leg (WP 0005).

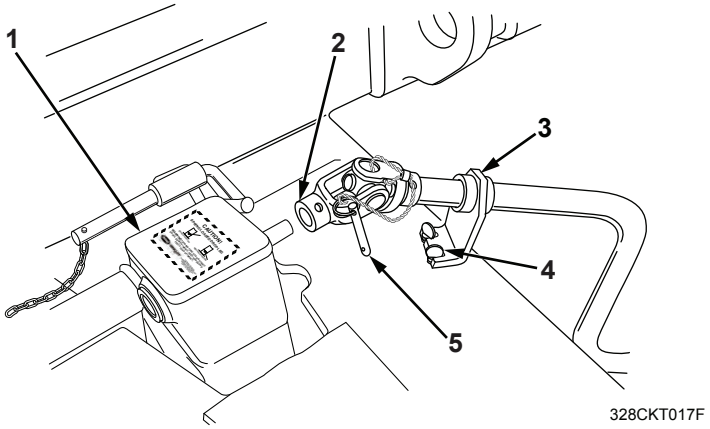


Figure 8. Landing Leg Hand Crank Installation.

7. Remove suitable lifting device.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
SPRING AND TORQUE ROD MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)
Ratchet, 3/4 in. Drive
(WP 0109, Table 1, Item 6)
Socket ,1-5/16 in., 3/4 in. Drive
(WP 0109, Table 1, Item 10)
Torque Wrench, 3/4 in. Drive, 0 to 600 lb-ft
(0 to 813 N•m)
(WP 0109, Table 1, Item 19)
Wrench, Open End 1-1/4 in. x 1-5/16 in.
(WP 0109, Table 1, Item 21)

Materials/Parts
Locknut (WP 0094, Figure 18, Item 7)
Locknut Qty: 2 (WP 0094, Figure 18, Item 14)
Locknut Qty: 2 (WP 0094, Figure 18, Item 21)

Personnel Required
(4)

References
TM 9-4910-783-13&P
TM 10-7360-226-13&P
WP 0094

Equipment Condition
Wheels chocked (WP 0005)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)
Wheel and tire assembly removed (WP 0033)

WARNING

- Suitable support devices must be positioned directly under trailer frame to prevent slippage. Suitable support devices with a minimum rating of 30,000 lb (13,608 kg) and assistance will be needed to perform this task. Suitable support devices must be used only on a hard, level surface to prevent shifting of trailer. Use wheel chocks. Direct all personnel to stay clear of trailer when supported in air. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.
- DO NOT use the leveling jacks to lift trailer off the ground. Leveling jacks do not provide enough stability to safely lift the trailer off ground. The trailer may drop resulting in personnel death, injury, or equipment damage. Seek medical attention in event of injury.
- Each axle with hub and drum weighs 425 lb (193 kg). Suitable lifting devices rated at a minimum of 640 lb (290 kg) and assistance will be needed to perform this procedure. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.
- Each spring weighs 175 lb (79 kg). Suitable lifting devices rated at a minimum of 250 lb (113 kg) and assistance will be needed to perform this procedure. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

CAUTION

This task can be completed in a safer manner if the container is removed from the trailer prior to starting the task. Refer to TM 9-4910-783-13&P or TM 10-7360-226-13&P. If the mission does not permit the removal of container, extra caution and support are required. The trailer may shift. Failure to comply may cause equipment damage.

NOTE

This removal and installation procedure is for one side of trailer at a time. Curbside of trailer has adjustable torque arm. Roadside of trailer has solid torque arm. This procedure covers curbside spring assembly.

REMOVAL

1. Raise trailer high enough to relieve tension on springs (Figure 1, Items 8 and 37).
2. Position supports under corners of trailer (front and rear).
3. Remove two nuts (Figure 1, Items 15 and 19), bolts (Figure 1, Items 2 and 20), and tandem torque arm (Figure 1, Item 17) from center rocker hanger (Figure 1, Item 25) and rear axle spring seat (Figure 1, Item 14) welded to rear axle (Figure 1, Item 13).
4. Support rear axle (Figure 1, Items 13) to prevent it from dropping. Remove four hex nuts (Figure 1, Item 7), flat washers (Figure 1, Item 6), and top plate (Figure 1, Item 5).
5. Remove two U-bolts (Figure 1, Item 16) and spring (Figure 1, Item 8) from spring seat (Figure 1, Item 14) welded to axle (Figure 1, Item 13), center rocker assembly (Figure 1, Item 24), and rear spring hanger (Figure 1, Item 10).
6. Remove two bolts (Figure 1, Items 33 and 36), nuts (Figure 1, Items 30 and 34), and torque rod (Figure 1, Item 32) from front axle spring seat (Figure 1, Item 29) and from front spring hanger (Figure 1, Item 35) welded to trailer.
7. Support front axle (Figure 1, Item 28) to prevent it from dropping. Remove four hex nuts (Figure 1, Item 1), flat washers (Figure 1, Item 39), and top plate (Figure 1, Item 38).
8. Remove two U-bolts (Figure 1, Item 31) and spring (Figure 1, Item 37) from spring seat (Figure 1, Item 29) welded to front axle (Figure 1, Item 28), center rocker assembly (Figure 1, Item 24), and front spring hanger (Figure 1, Item 35).

NOTE

Only perform Steps 9 through 11 if there is damage to these parts. Notify supervisor if parts are damaged.

9. Remove two locknuts (Figure 1, Item 26), bolts (Figure 1, Item 18), and sleeve spacers (Figure 1, Item 27) from center rocker hanger (Figure 1, Item 25) welded to frame. Discard locknuts (Figure 1, Item 26).

NOTE

Only perform Steps 9 through 11 if there is damage to these parts. Notify supervisor if parts are damaged.

10. Remove locknut (Figure 1, Item 3), screw (Figure 1, Item 21), two flat washers (Figure 1, Items 4 and 22), and rocker bushing (Figure 1, Item 23). Discard locknut (Figure 1, Item 3).
11. Remove screw (Figure 1, Item 11), locknut (Figure 1, Item 9), and sleeve (Figure 1, Item 12) from rear spring hanger (Figure 1, Item 10) welded to frame. Discard locknut (Figure 1, Item 9).

REMOVAL - Continued

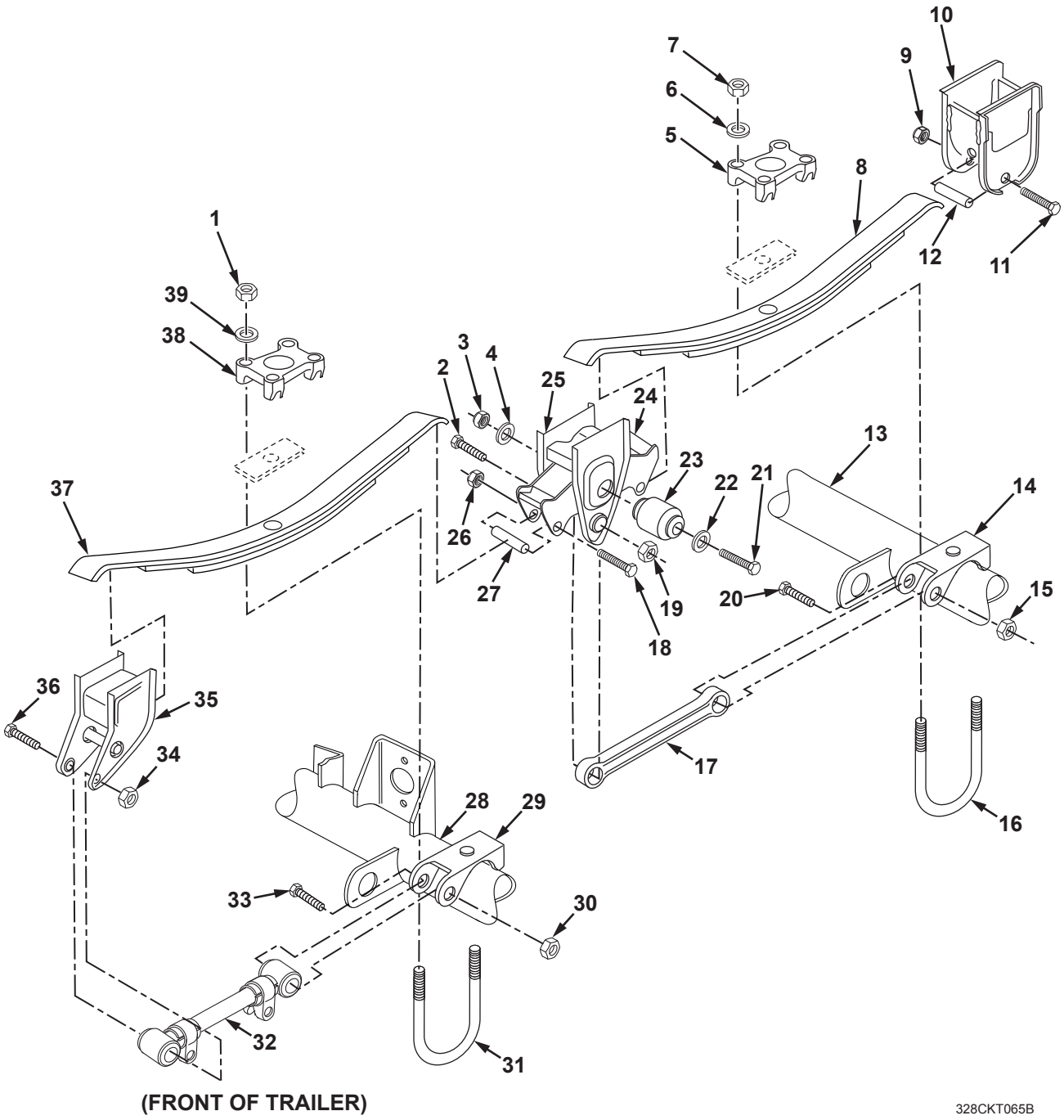


Figure 1. Spring Removal.

END OF TASK

INSTALLATION

NOTE

Only perform Steps 1 through 3 if parts were damaged and removed.

1. Install sleeve (Figure 2, Item 12) with screw (Figure 2, Item 11) and new locknut (Figure 2, Item 9) on rear spring hanger (Figure 2, Item 10) welded to frame.
2. Install rocker bushing (Figure 2, Item 23), two flat washers (Figure 2, Items 4 and 22), screw (Figure 2, Item 21), and new locknut (Figure 2, Item 3).
3. Install two sleeve spacers (Figure 2, Item 27) with two screws (Figure 2, Item 18) and new locknuts (Figure 2, Item 26) on center rocker hanger (Figure 2, Item 25) welded to frame.
4. Support front axle (Figure 2, Item 28) to prevent it from dropping. Install spring (Figure 2, Item 37) on front spring hanger (Figure 2, Item 35), center rocker assembly (Figure 2, Item 24) and front axle spring seat (Figure 2, Item 29) welded to front axle (Figure 2, Item 28).
5. Install two U-bolts (Figure 2, Item 31) on front axle (Figure 2, Item 28) with top plate (Figure 2, Item 38), four flat washers (Figure 2, Item 39) and hex nuts (Figure 2, Item 1). DO NOT tighten hex nuts (Figure 2, Item 1) at this time.
6. Adjust position of front spring (Figure 2, Item 37), if necessary, so spring (Figure 2, Item 37) is centered on front spring hanger (Figure 2, Item 35) and center rocker assembly (Figure 2, Item 24). Torque four hex nuts (Figure 2, Item 1) to 285 lb-ft (386 N•m).
7. Install torque rod (Figure 2, Item 32) on front axle spring seat (Figure 2, Item 29) and front spring hanger (Figure 2, Item 35) welded to frame, with two nuts (Figure 2, Items 30 and 34) and bolts (Figure 2, Items 33 and 36). Torque two nuts (Figure 2, Items 30 and 34) to 540 lb-ft (732 N•m).
8. Support rear axle (Figure 2, Item 13) to prevent it from dropping. Install spring (Figure 2, Item 8) on rear spring hanger (Figure 2, Item 10), center rocker assembly (Figure 2, Item 24), and rear axle spring seat (Figure 2, Item 14) welded to rear axle (Figure 2, Item 13).
9. Install two U-bolts (Figure 2, Item 16) on rear axle (Figure 2, Item 13) with top plate (Figure 2, Item 5), four flat washers (Figure 2, Item 6), and hex nuts (Figure 2, Item 7). DO NOT tighten hex nuts (Figure 2, Item 7) at this time.
10. Adjust position of rear spring (Figure 2, Item 8), if necessary, so spring (Figure 2, Item 8) is centered on rear spring hanger (Figure 2, Item 10) and center rocker assembly (Figure 2, Item 24). Torque four hex nuts (Figure 2, Item 7) to 285 lb-ft (386 N•m).
11. Install torque arm (Figure 2, Item 17) on rear axle spring seat (Figure 2, Item 14) and center rocker hanger (Figure 2, Item 25) welded to frame with two nuts (Figure 2, Items 15 and 19) and bolts (Figure 2, Items 2 and 20). Torque two nuts (Figure 2, Items 15 and 19) to 540 lb-ft (732 N•m).
12. Remove supports under corners of trailer (front and rear).
13. Lower trailer.

INSTALLATION - Continued

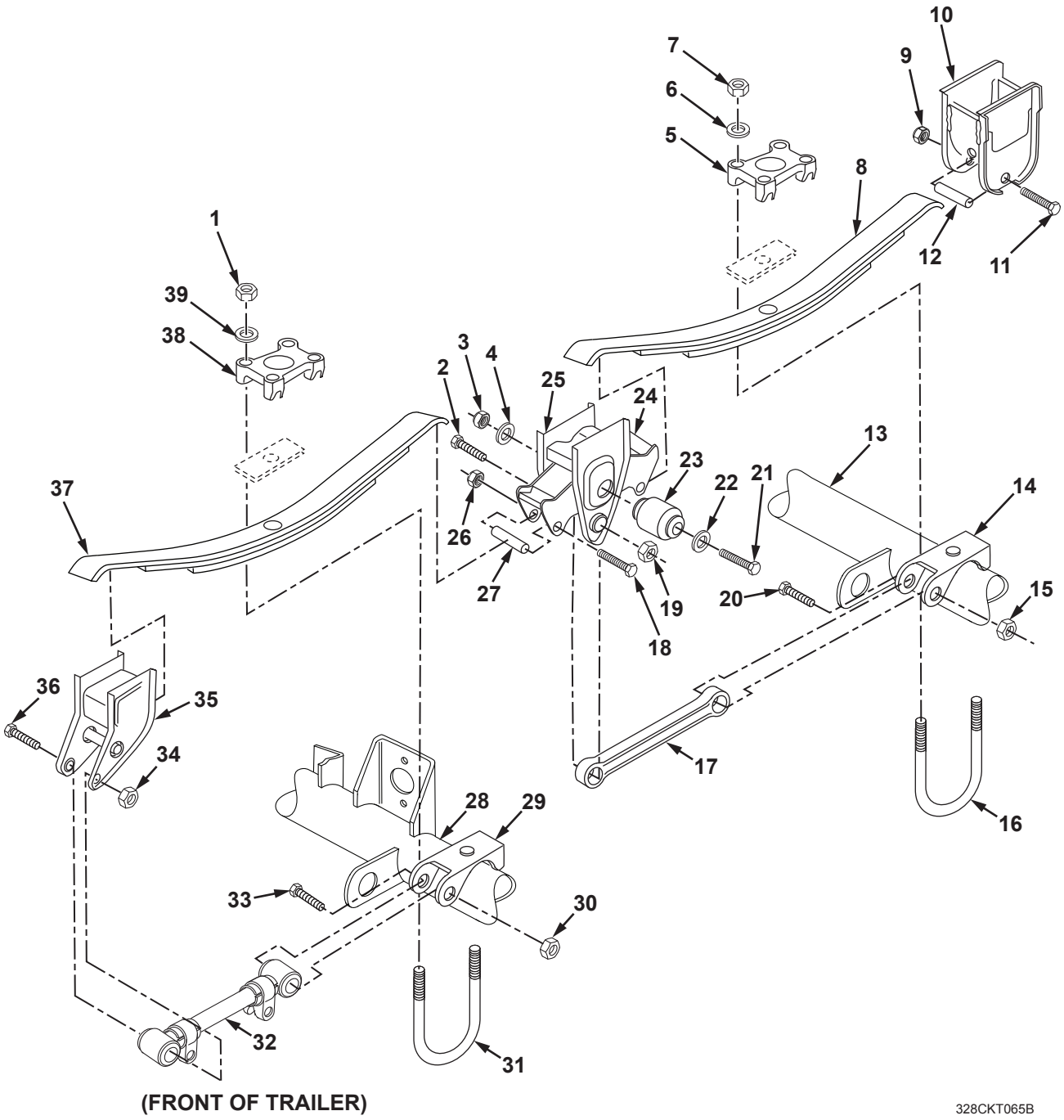


Figure 2. Spring and Torque Rod Installation.

END OF TASK

AXLE ALIGNMENT

1. Axle should be aligned in relation to center of coupler.
2. Measure distance from coupler to center line of the spindles on front axle, as shown in Figure 3.
3. Loosen torque rod locking bolts on each end of front adjustable torque rod.
4. Rotate front adjustable torque rod clockwise or counterclockwise until distance from coupler and front axle spindle end are equal.
5. When the distance from the center of the coupler to the center of the spindle is the same on both ends of the front axle, tighten the locking bolts on the end of the front adjustable torque rod.

NOTE

- Dimensions A and B represent the distance measured to align rear axle with front axle.
- Adjustment of the rear axle is done the same as the front axle using the rear adjustable torque rod.

6. Align rear axle with front axle by measuring between Items A and B as illustrated in Figure 3.

AXLE ALIGNMENT - Continued

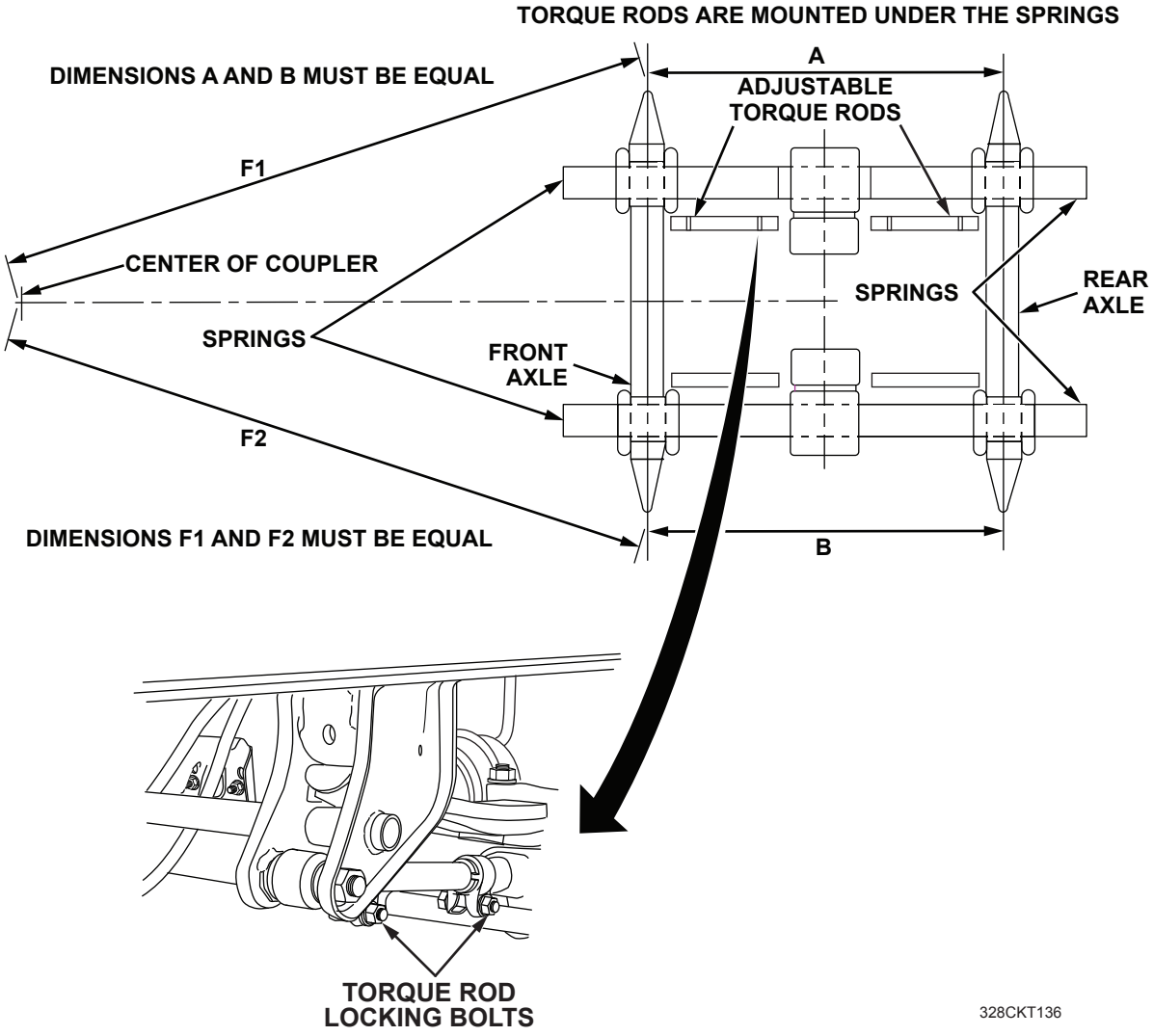


Figure 3. Axle Alignment.

END OF TASK

FOLLOW-ON TASK

Install wheel and tire assembly (WP 0033).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
REFLECTORS REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Locknut Qty: 2 (WP 0095, Figure 19, Item 2)

References
WP 0068

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)

NOTE

- There are four red reflectors and two amber reflectors. They are all removed and installed the same way. This procedure covers one reflector.
- The four reflectors in the rear will need to have the rear electrical covers removed (WP 0068).

REMOVAL

Remove two screws (Figure 1, Item 4), flat washers (Figure 1, Item 3), locknuts (Figure 1, Item 2), and reflector (Figure 1, Item 1). Discard locknuts (Figure 1, Item 2).

END OF TASK

INSTALLATION

Install reflector (Figure 1, Item 1) with two screws (Figure 1, Item 4), flat washers (Figure 1, Item 3), and new locknuts (Figure 1, Item 2).

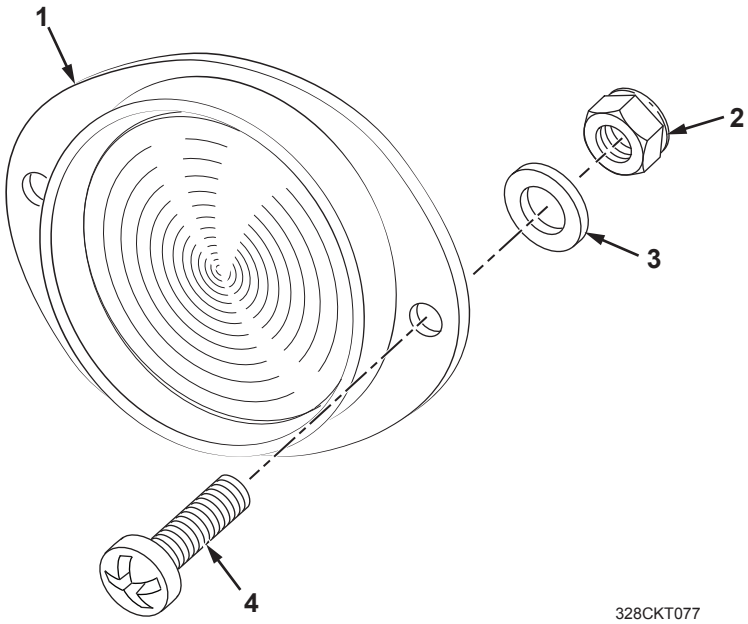


Figure 1. Reflector Removal and Installation.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
TOOL BOX REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Locknut Qty: 4 (WP 0096, Figure 20, Item 3)
Locknut Qty: 8 (WP 0096, Figure 20, Item 7)

Personnel Required
(2)

References
WP 0073

Equipment Condition
Wheels chocked (WP 0005)
Landing leg down (WP 0005)
Trailer disconnected from prime mover (WP 0005)
Items removed from tool box

WARNING

Tool box weighs approximately 75 lb (34 kg) and must be supported to prevent it from slipping or falling. Suitable support device(s) rated at a minimum of 150 lb (68 kg) and assistance will be needed to perform this procedure. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

REMOVAL

1. Support tool box (Figure 1, Item 1) on suitable support devices.
2. Remove four locknuts (Figure 1, Item 6) and screws (Figure 1, Item 5) from each side of tool box frame, and lift tool box (Figure 1, Item 1) from trailer frame. Discard locknuts (Figure 1, Item 6).

END OF TASK

DISASSEMBLY

NOTE

- Only perform disassembly if these parts are damaged or not functioning properly.
- Support tool box lid when performing disassembly.

1. Remove four locknuts (Figure 1, Item 2) and latch (Figure 1, Item 3) from tool box (Figure 1, Item 1). Discard locknuts (Figure 1, Item 2).
2. Remove two wing nuts (Figure 1, Item 4) and wing nut (Figure 1, Item 7).

END OF TASK

ASSEMBLY

NOTE

- Only perform assembly if these parts have been removed.
- Support tool box lid when performing assembly.

1. Install two wing nuts (Figure 1, Item 4) and wing nut (Figure 1, Item 7).
2. Install latch (Figure 1, Item 3) with four new locknuts (Figure 1, Item 2) on tool box (Figure 1, Item 1).

END OF TASK

INSTALLATION

Place tool box (Figure 1, Item 1) on suitable support devices, position tool box frame on trailer frame, and install four screws (Figure 1, Item 5) and new locknuts (Figure 1, Item 6) on each side to secure.

INSTALLATION - Continued

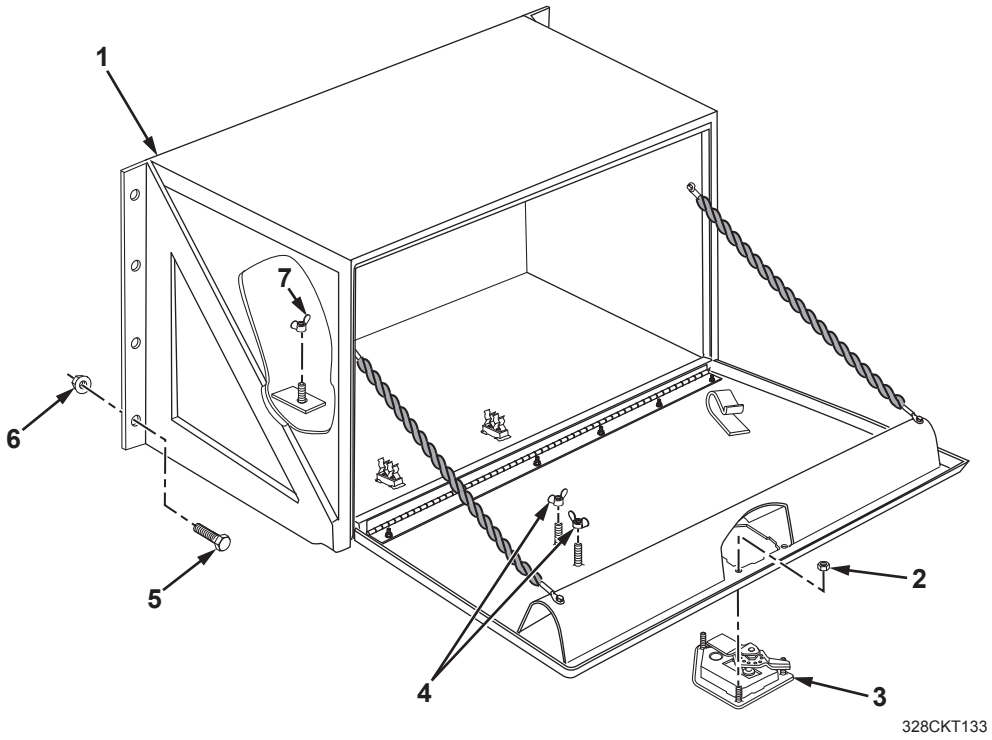


Figure 1. Tool Box Removal and Installation.

END OF TASK

FOLLOW-ON TASKS

1. Lubricate hinges with oil (WP 0073).
2. Place items back in tool box and secure.
3. Connect trailer to prime mover (WP 0005).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
ELECTRICAL COVER AND CABLE CLAMP REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

References
WP 0044
WP 0045

Materials/Parts
Lockwasher (XCK2000 Trailer Only) Qty: 7
(WP 0097, Figure 21, Item 3)
Lockwasher (XCK2000E1 Trailer Only) Qty: 14
(WP 0097, Figure 21, Item 3)

Equipment Condition
Wheels chocked (WP 0005)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)

WARNING

Disconnect electrical power from trailer before performing any cleaning or maintenance of electrical system to avoid being shocked. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

REMOVAL

1. Remove two nuts (Figure 1, Item 6), lockwashers (Figure 1, Item 5), and front electrical cover (Figure 1, Item 1). Discard lockwashers (Figure 1, Item 5).
2. Remove nut (Figure 1, Item 9), lockwasher (Figure 1, Item 8), and cable clamp (Figure 1, Item 7). Discard lockwasher (Figure 1, Item 8).

NOTE

Only perform Steps 3 and 4 if these parts are damaged.

3. Disconnect 12 connectors of intervehicular cable (WP 0044) and chassis wiring harness (WP 0045).
4. Remove four nuts (Figure 1, Item 2), lockwashers (Figure 1, Item 3), and two clips (Figure 1, Item 4). Discard lockwashers (Figure 1, Item 3).

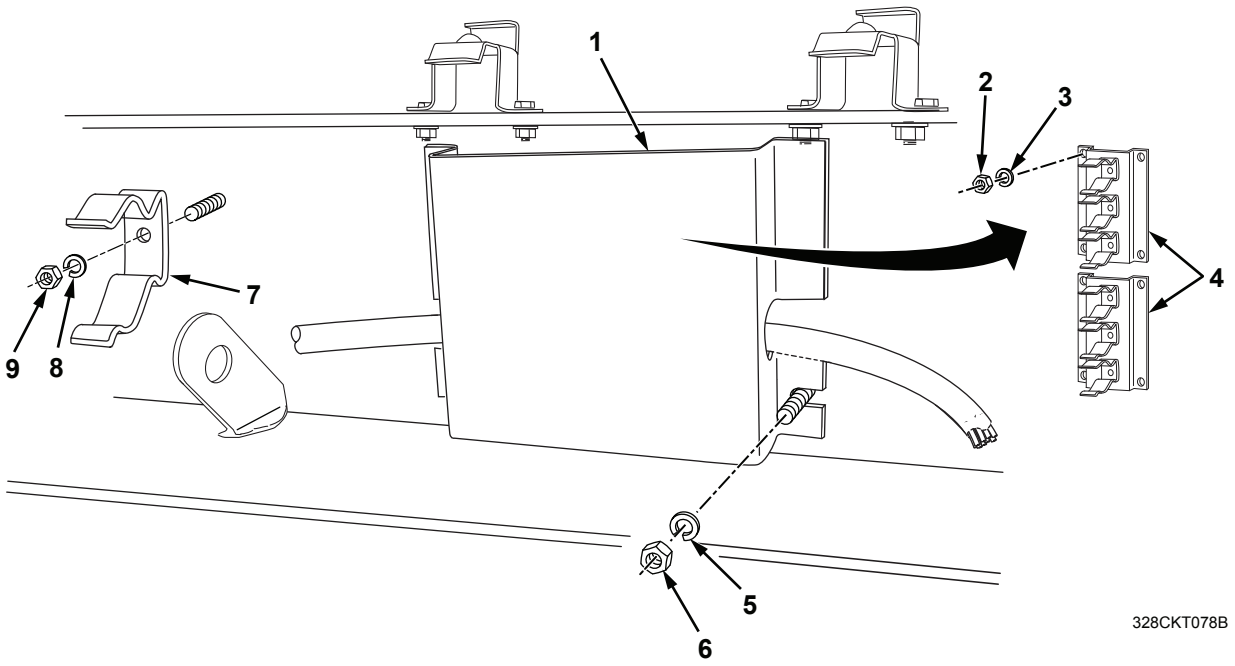


Figure 1. Front Electrical Cover and Cable Clamp Removal.

NOTE

- The XCK2000E1 trailer has two rear electrical covers. Step 5 removes one cover only. The other cover is removed the same way.
- Only perform Step 6 if these parts are damaged.

5. Remove four nuts (Figure 2, Item 3), lockwashers (Figure 2, Item 2), and rear electrical cover (Figure 2, Item 1). Discard lockwashers (Figure 2, Item 2).
6. Remove nut (Figure 2, Item 4), lockwasher (Figure 2, Item 5), and cable clamp (Figure 2, Item 6). Discard lockwasher (Figure 2, Item 5).
7. Remove two nuts (Figure 2, Item 9), lockwashers (Figure 2, Item 8), and clip (Figure 2, Item 7). Discard lockwashers (Figure 2, Item 8).

REMOVAL - Continued

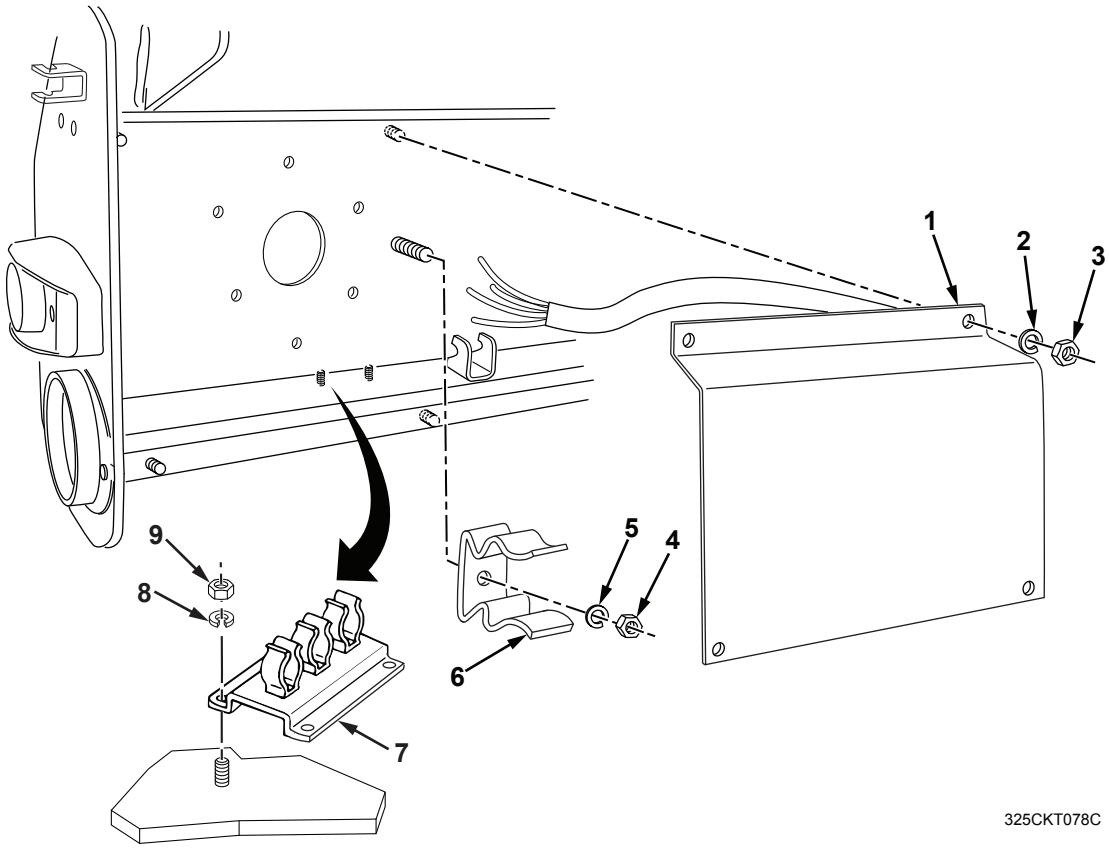


Figure 2. XCK2000E1 Trailer Rear Electrical Cover Removal.

END OF TASK

INSTALLATION

NOTE

- The XCK2000E1 trailer has two rear electrical covers. Step 3 removes one cover only. The other cover is removed the same way.
- Only perform Steps 1 and 2 if parts were damaged and removed.

1. Install clip (Figure 3, Item 7), two new lockwashers (Figure 3, Item 8), and nuts (Figure 3, Item 9).
2. Install cable clamp (Figure 3, Item 6), new lockwasher (Figure 3, Item 5), and nut (Figure 3, Item 4).
3. Install rear electrical cover (Figure 3, Item 1) using four new lockwashers (Figure 3, Item 2) and nuts (Figure 3, Item 3).

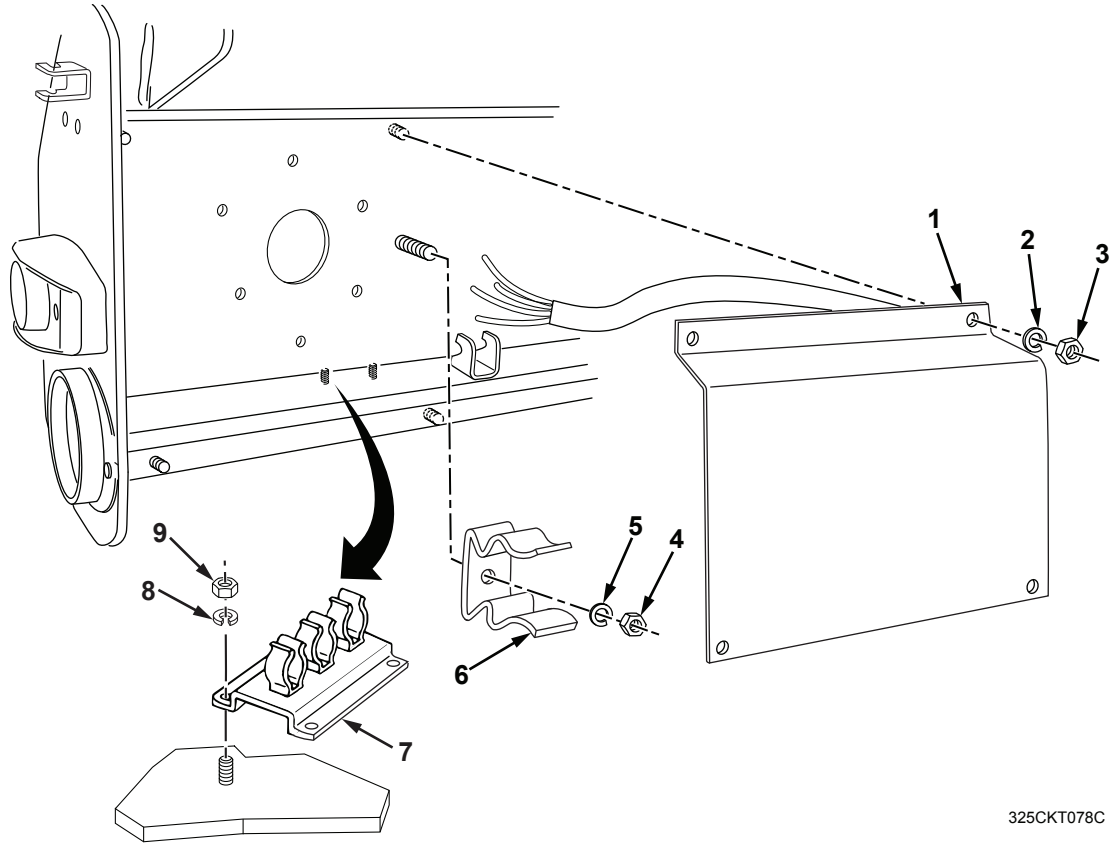


Figure 3. XCK2000E1 Trailer Rear Electrical Cover Installation.

INSTALLATION - Continued

NOTE

Only perform Steps 4 and 5 if parts were damaged and removed.

4. Install two clips (Figure 4, Item 4), four new lockwashers (Figure 4, Item 3), and nuts (Figure 4, Item 2).
5. Connect 12 connectors of intervehicular cable (WP 0044) and chassis wiring harness (WP 0045).
6. Install cable clamp (Figure 4, Item 7) with new lockwasher (Figure 4, Item 8) and nut (Figure 4, Item 9).
7. Install front electrical cover (Figure 4, Item 1) with two new lockwashers (Figure 4, Item 5) and nuts (Figure 4, Item 6).

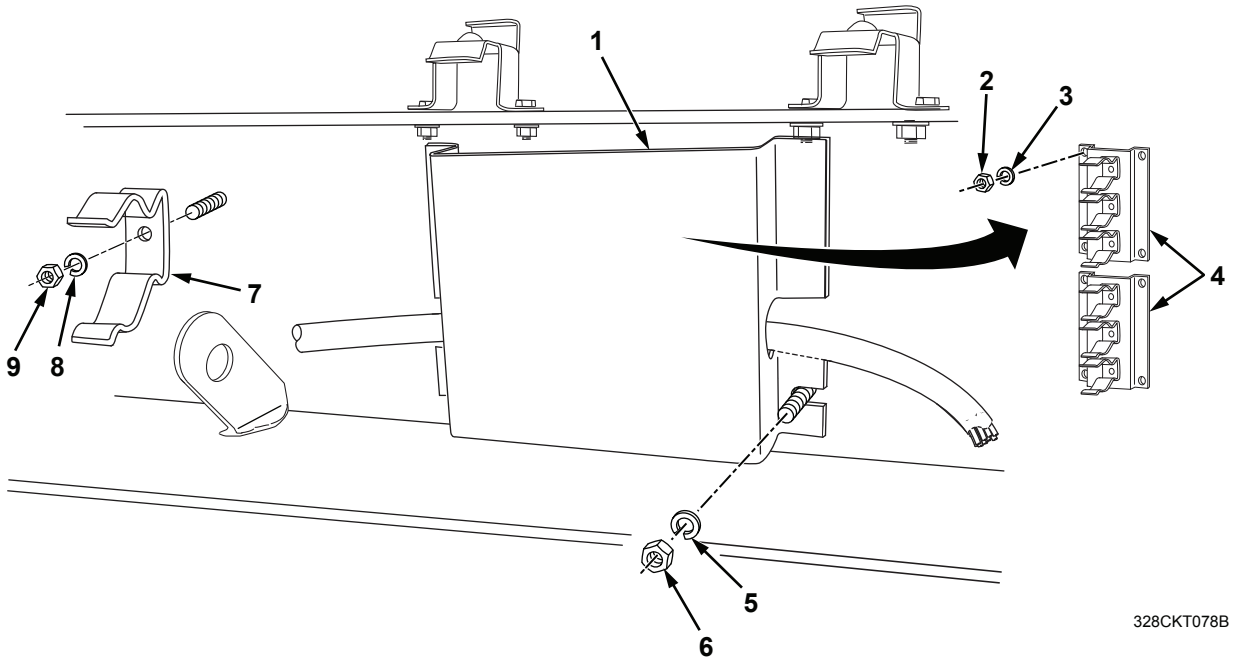


Figure 4. Front Electrical Cover and Cable Clamp Installation.

END OF TASK

FOLLOW-ON TASK

Connect trailer to prime mover (WP 0005).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
REAR BUMPER CLAMP REPLACEMENT (XCK2000E1)

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Lockwasher Qty: 12 (WP 0098, Figure 22, Item 2)

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)

NOTE

There are two outer bumper clamps and two inner bumper clamps which are removed and installed the same way. This procedure covers one of each.

REMOVAL

1. Release outer rear bumper clamp (Figure 1, Item 3) from latch (Figure 1, Item 8).
2. Remove four screws (Figure 1, Item 4), nuts (Figure 1, Item 6), lockwashers (Figure 1, Item 5), and outer bumper clamp (Figure 1, Item 3). Discard lockwashers (Figure 1, Item 5).
3. Remove two screws (Figure 1, Item 7), nuts (Figure 1, Item 1), lockwashers (Figure 1, Item 2), and outer latch (Figure 1, Item 8). Discard lockwashers (Figure 1, Item 2).
4. Remove four screws (Figure 1, Item 13), nuts (Figure 1, Item 15), lockwashers (Figure 1, Item 16), and inner bumper clamp (Figure 1, Item 14). Discard lockwashers (Figure 1, Item 16).
5. Remove two screws (Figure 1, Item 12), nuts (Figure 1, Item 10), lockwashers (Figure 1, Item 9), and inner latch (Figure 1, Item 11). Discard lockwashers (Figure 1, Item 9).
6. Repeat Steps 1 through 5 for other side of trailer.

END OF TASK

INSTALLATION

1. Install inner latch (Figure 1, Item 11), with two screws (Figure 1, Item 12), new lockwashers (Figure 1, Item 9), and nuts (Figure 1, Item 10).
2. Install inner bumper clamp (Figure 1, Item 14) with four screws (Figure 1, Item 13), new lockwashers (Figure 1, Item 16), and nuts (Figure 1, Item 15).
3. Install latch (Figure 1, Item 8) with two screws (Figure 1, Item 7), new lockwashers (Figure 1, Item 2), and nuts (Figure 1, Item 1).
4. Install outer bumper clamp (Figure 1, Item 3) with four screws (Figure 1, Item 4), new lockwashers (Figure 1, Item 5), and nuts (Figure 1, Item 6).
5. Fasten outer bumper clamp (Figure 1, Item 3) on latch (Figure 1, Item 8).
6. Repeat Steps 1 through 5 for other side of trailer.

INSTALLATION - Continued

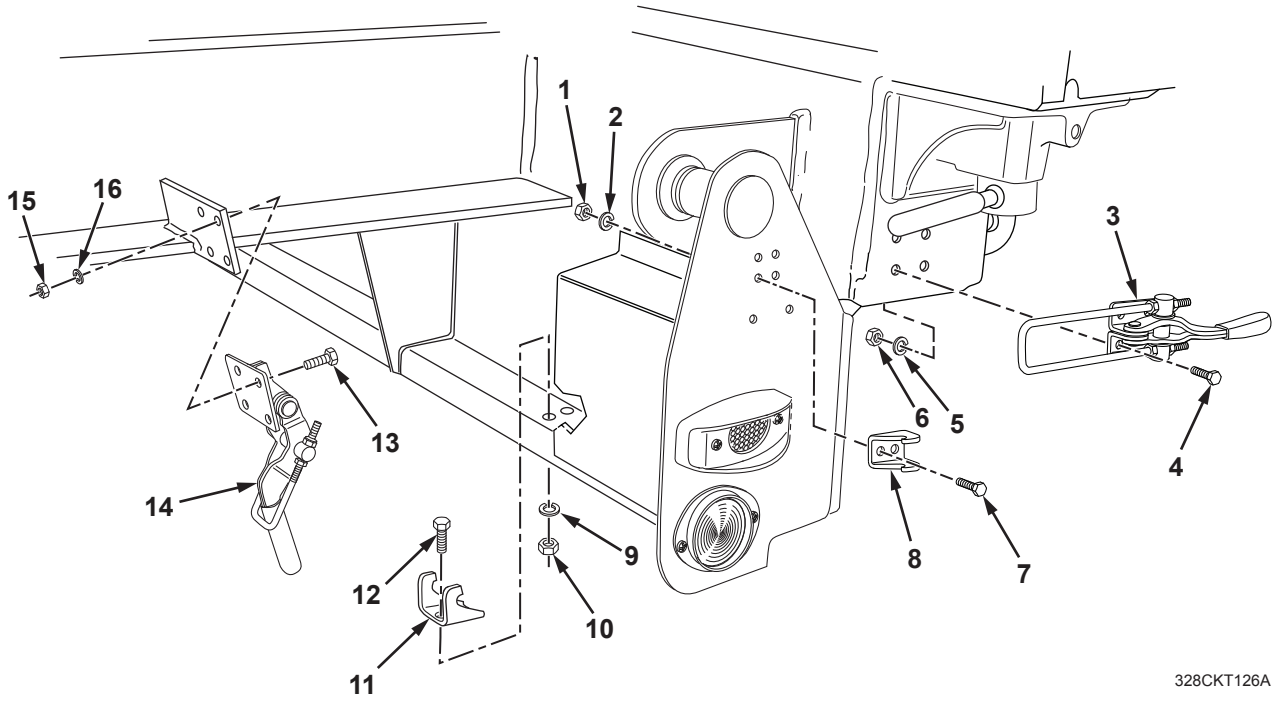


Figure 1. Rear Bumper Clamp (XCK2000E1) Removal and Installation.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
DATA PLATES AND DECAL REPLACEMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)
Drill (WP 0109, Table 1, Item 2)
Drill set (WP 0109, Table 1, Item 3)

Materials/Parts
Drive Screw Qty: 8 (WP 0099, Figure 23, Item 2)

Equipment Condition
Wheels chocked (WP 0005)

Equipment Condition (cont.)
Landing leg down (WP 0005)
Trailer disconnected from prime mover
(WP 0005)

WARNING

Particles from drilling operations are hazardous to the eyes. Wear eye protection when drilling to prevent objects from hitting you in the eyes. Failure to comply may result in personnel injury. Seek medical attention in event of injury.

NOTE

Steps 1 and 2 will remove all data plates and decals. Only remove what needs to be replaced.

REMOVAL

1. Remove eight drive screws (Figure 1, Item 2), identification data plate (Figure 1, Item 1), and transportation data plate (Figure 1, Item 3). Discard drive screws (Figure 1, Item 2).
2. Remove landing leg decal (Figure 1, Item 4). Discard decal (Figure 1, Item 4).

END OF TASK

INSTALLATION

1. Install new landing leg decal (Figure 1, Item 4).
2. Install identification data plate (Figure 1, Item 1) and transportation data plate (Figure 1, Item 3) with eight new drive screws (Figure 1, Item 2).

INSTALLATION - Continued

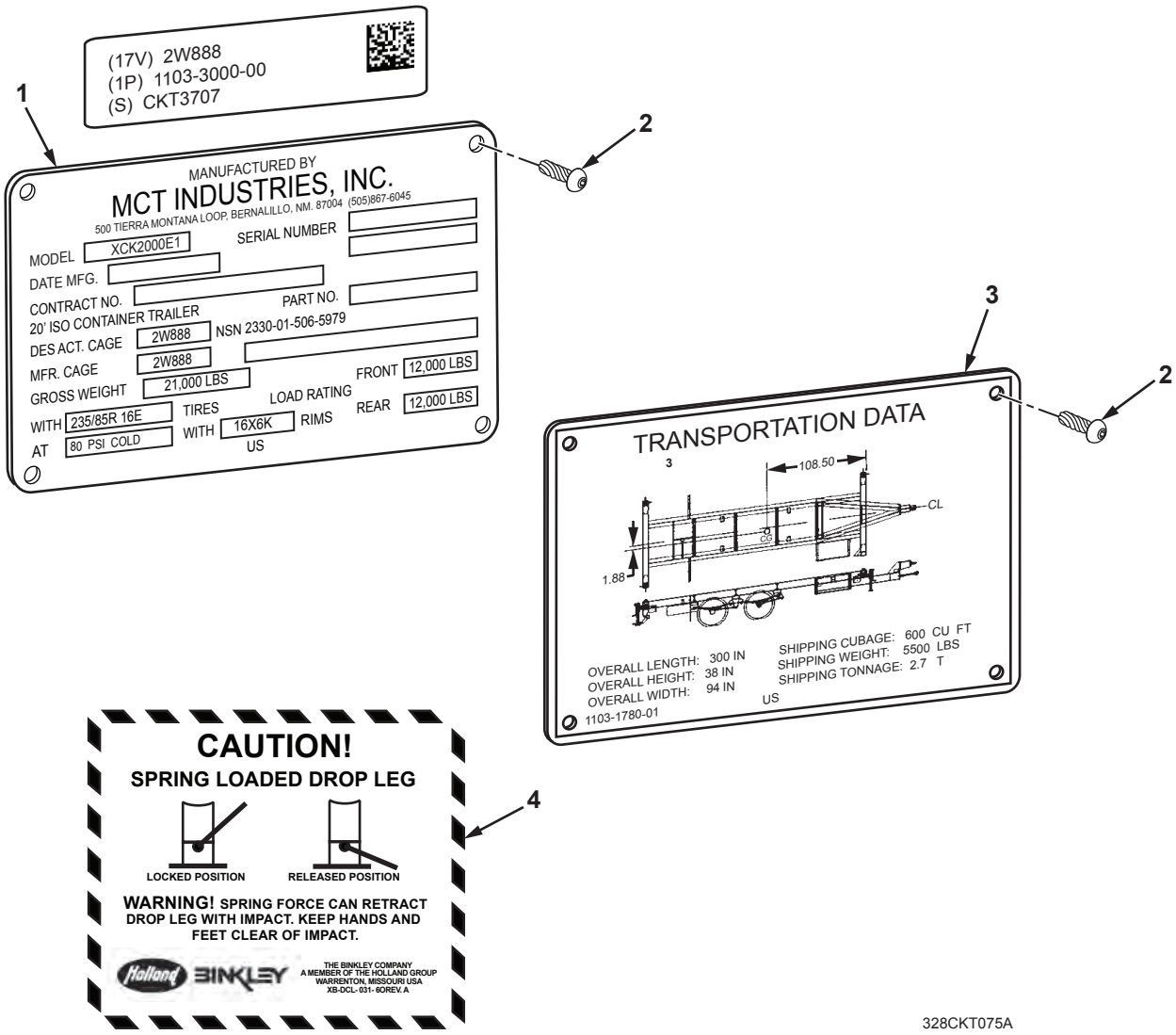


Figure 1. Data Plates and Decal.

END OF TASK

FOLLOW-ON TASKS

1. Connect trailer to prime mover (WP 0005).
2. Raise landing leg (WP 0005).
3. Remove and store chock blocks (WP 0005).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
PREPARATION FOR STORAGE OR SHIPMENT

INITIAL SETUP:

Tools and Special Tools
Tool Kit, General Mechanic's
(WP 0109, Table 1, Item 15)

Materials/Parts
Corrosion Preventive Compound
(WP 0108, Table 1, Item 8)

References
DA Form 2404
DA Form 2407
DA Form 5988-E

References (cont.)
DA PAM 750-8
DD Form 1397
SB 740-98-1
SF 364
TB 43-0213
TM 38-400
TM 43-0139
TM 55-2200-001-12
WP 0032
WP 0039
WP 0073

GENERAL

1. This Work Package (WP) contains requirements and procedures for administrative storage of equipment issued to and in use by Army activities worldwide.
2. The requirements specified herein are necessary to maintain equipment in administrative storage in such a way as to achieve the maximum readiness condition.
3. Equipment placed in administrative storage should be capable of being readied to perform its mission within a 24-hour period, or as otherwise may be prescribed by the approving authority. Before equipment is placed in administrative storage, current Preventive Maintenance Checks and Services (PMCS) must be completed and deficiencies corrected.
4. Report equipment in administrative storage as prescribed for all reportable equipment.
5. Perform inspections, maintenance services, and lubrication as specified herein.
6. Records and reports to be maintained for equipment in administrative storage are those prescribed by DA PAM 750-8 for equipment in use.
7. A 10 percent variance is acceptable on time, running hours, or mileage used to determine the required maintenance actions.
8. Accomplishment of applicable PMCS, as mentioned throughout this WP, will be on a quarterly basis.

DEFINITION OF ADMINISTRATIVE STORAGE

The placement of equipment in administrative storage can be for short periods of time when a shortage of maintenance effort exists. Items should be ready for use within the time factors as determined by the directing authority. During the storage period, appropriate maintenance records will be kept.

PREPARATION OF EQUIPMENT FOR ADMINISTRATIVE STORAGE

Storage Site

1. Select the best available site for administrative storage. Separate stored equipment from equipment in use. Conspicuously mark the area "ADMINISTRATIVE STORAGE."
2. Covered space is preferred. When sufficient covered space for all items to be stored is not available, priority should be given to items which are most susceptible to deterioration from the elements. SB 740-98-1 should be used as a guide for establishing which items are most susceptible to deterioration.
3. Open sites should be improved hardstand, if possible. Unimproved sites should be firm, well-drained, and kept free of excessive vegetation.

Storage Plan

1. Store equipment so as to provide maximum protection from the elements and to provide access for inspection, maintenance, and exercising. Anticipate removal or deployment problems and take suitable precautions.
2. Take into account environmental conditions, such as extreme heat or cold, high humidity, blowing sand or loose debris, soft ground, mud, and heavy snow, and take adequate precautions.
3. Establish a fire plan and provide for adequate fire fighting equipment and personnel.

Maintenance Services and Inspection

1. Prior to storage, perform the next scheduled Field PMCS (WP 0032).
2. Inspect and approve the equipment prior to storage. DO NOT place equipment in storage in a nonmission capable condition.
3. Lubricate equipment in accordance with applicable lubrication instructions located in WP 0073.

END OF TASK

BASIC ISSUE ITEMS (BII) AND ADDITIONAL AUTHORIZATION LIST (AAL) ITEMS

1. Process BII and AAL items simultaneously with the major item to which they are assigned.
2. If possible, store BII and AAL items with the major item.
3. If stored apart from the major item, mark BII and AAL items with tags indicating the major item, its registration or serial number, and location, and store in protective-type closures. In addition, place a tag or list indicating the location of the removed items in a conspicuous place on the major item.

END OF TASK

CORRECTION OF SHORTCOMINGS AND DEFICIENCIES

Correct all shortcomings and deficiencies prior to storage, or obtain a waiver from the approving authority.

END OF TASK

GENERAL CLEANING, PAINTING, AND PRESERVATION

CAUTION

DO NOT direct water or steam, under pressure, against electrical wires or any exterior opening. Failure to comply may result in equipment damage.

GENERAL CLEANING, PAINTING, AND PRESERVATION - Continued

1. Clean all equipment of dirt, grease, and other contaminants in accordance with applicable provisions of this manual. DO NOT use vapor degreasing. Remove foreign objects that are wedged in tire treads.
2. Remove rust and damaged paint by scraping, wire brushing, sanding, or buffing. Sand to a smooth finish and spot paint as necessary. Refer to TM 43-0139.
3. After cleaning and drying, immediately coat unpainted wear surfaces with oil, grease, or the appropriate corrosion preventive compound (WP 0073). Refer to TB 43-0213 for further information about corrosion.

NOTE

Air circulation under draped covers reduces deterioration from moisture and heat.

4. Place equipment and provide blocking or framing to allow ventilation and water drainage. Support cover away from item surfaces, which may rust, rot, or mildew.

END OF TASK

CARE OF EQUIPMENT IN ADMINISTRATIVE STORAGE

Maintenance Services

After equipment has been placed in administrative storage, inspect, service, and exercise as specified in this manual.

Inspection

Inspection will usually be visual and must consist of at least a walk-around examination of all equipment to detect any deficiencies. Inspect equipment in open storage weekly and equipment in covered storage monthly. Inspect all equipment immediately after any severe storm or environmental change. The following are examples of things to look for during a visual inspection:

1. Low or flat tires
2. Condition of preservatives, seals, and wraps
3. Corrosion or other deterioration (refer to TB 43-0213)
4. Missing or damaged parts
5. Water in components
6. Any other readily recognizable shortcomings or deficiencies

Repair During Administrative Storage

Keep equipment in an optimum state of readiness. Accomplish the required services and repairs as expeditiously as possible. Whenever possible, perform all maintenance on-site.

Exercising

Exercise equipment in accordance with Table 1 and the following instructions:

1. **Vehicle Major Exercise.** Depreserve equipment by removing only that material restricting exercise. Close all drains, remove blocks, and perform all before-operation checks. Couple trailer to prime mover, and drive for at least 25 miles (40 km). Make several right and left 90-degree turns. Make several hard braking stops without skidding. Do the following during exercising when it is convenient and safe: operate all other functional components and perform all during- and after-operation checks.

CARE OF EQUIPMENT IN ADMINISTRATIVE STORAGE - Continued

2. **Scheduled Services.** Scheduled services will include inspection per Inspection in this WP and will be conducted in accordance with Table 1. Lubricate in accordance with instructions in WP 0073.
3. **Corrective Action.** Immediately take action to correct shortcomings and deficiencies noted. Record inspection and exercise results on DA Form 2404/DA Form 5988-E. Record and report all maintenance actions on DA Form 2407. After exercising, restore the preservation to the original condition.

Table 1. Exercise Schedule.

WEEKS	2	4	6	8	10	12	14	16	18	20	22	24
PMCS						X						X
SCHEDULED SERVICES		X		X		X		X		X		
MAJOR EXERCISE												X

Rotation

To ensure utilization of all assigned materiel, rotate items in accordance with rotational plan to keep equipment in operational condition and reduce maintenance efforts.

END OF TASK

PROCEDURES FOR COMMON COMPONENTS AND MISCELLANEOUS ITEMS

Tires

Visually inspect tires during each walk-around inspection. This inspection includes checking tires with a tire gauge. Inflate, repair, or replace as necessary those found to be low, damaged, or excessively worn. Mark inflated and repaired tires with a crayon for checking at the next inspection.

Seals

Seals may develop leaks during storage or shortly thereafter. If leaking persists, refer to the applicable maintenance section in this manual for corrective maintenance procedures.

END OF TASK

REMOVAL OF EQUIPMENT FROM ADMINISTRATIVE STORAGE

Activation

Restore the equipment to normal operating condition in accordance with the instructions contained in WP 0039.

Servicing

Resume the maintenance service schedule in effect at the commencement of storage, or service the equipment before the scheduled dates in order to produce a staggered maintenance workload.

END OF TASK

PREPARATION OF EQUIPMENT FOR SHIPMENT

1. Refer to TM 55-2200-001-12 and TM 38-400 for additional instructions on processing, storage, and shipment of materiel.

NOTE

Steps 2 through 5 apply to the XCK2000E1 Trailer only.

2. Release outer bumper latch (Figure 1, Item 1) on both ends of bumper (Figure 1, Item 2).
3. Fold bumper (Figure 1, Item 2) under the rear of trailer.
4. Latch bumper (Figure 1, Item 2) in folded position with two inner bumper latches (Figure 1, Item 3).
5. Fold step (Figure 1, Item 5) and secure with pin (Figure 1, Item 4) on both sides of step (Figure 1, Item 5).

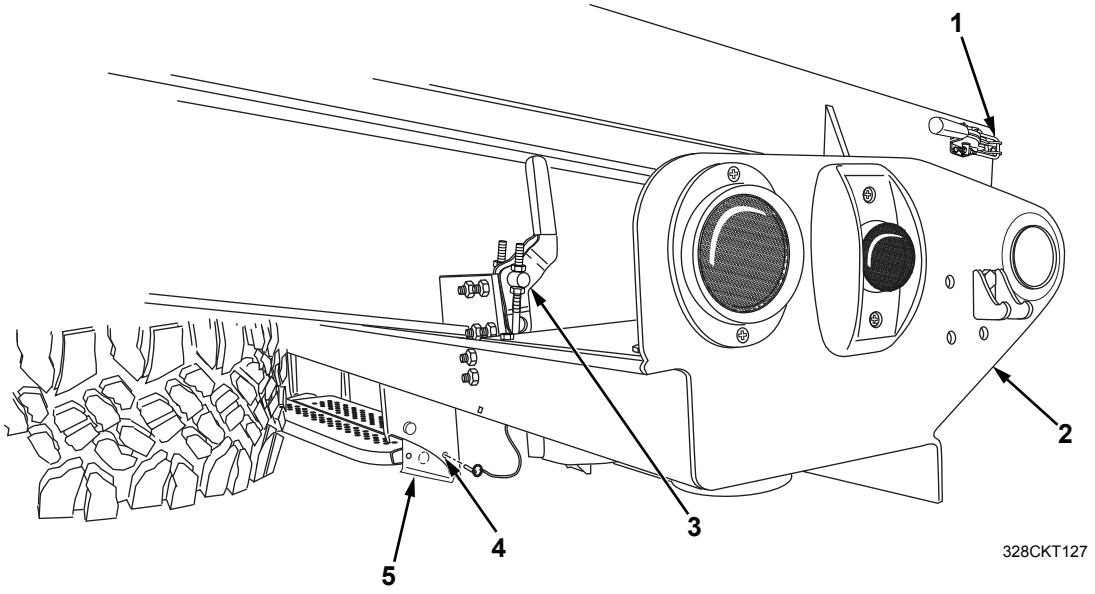


Figure 1. Bumper Placed in Storage and Shipment Position.

6. Trailers that have been removed from storage for shipment do not have to be reprocessed if they will reach their destination within the administrative storage period. Reprocess only if inspection reveals any corrosion or if anticipated in-transit weather conditions make it necessary.
7. When a trailer is received that has already been processed for domestic shipment, as indicated on DD Form 1397, the trailer does not have to be reprocessed for storage unless corrosion and deterioration are found during the inspection upon receipt. List on SF 364 all discrepancies found because of poor preservation, packaging, packing, marking, handling, loading, storage, or excessive preservation. Repairs that cannot be handled by the receiving unit must have tags attached listing needed repairs. A report of these conditions will be submitted by the unit commander for action by an ordnance maintenance unit.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
GENERAL MAINTENANCE INSTRUCTIONS

INITIAL SETUP:

Tools and Special Tools
- Tool Kit, General Mechanic's (WP 0109, Table 1, Item 15)
- Gloves, Chemical and Oil Protective (WP 0109, Table 1, Item 4)

Materials/Parts
- Adhesive (WP 0108, Table 1, Item 1)
- Brush, Scrub (WP 0108, Table 1, Item 4)
- Cleaning Solvent, Type II (WP 0108, Table 1, Item 5)
- Detergent (WP 0108, Table 1, Item 10)
- Oil, Lubricating (WP 0108, Table 1, Item 14)

Materials/Parts (cont.)
- Rag, Wiping (WP 0108, Table 1, Item 15)
- Silicone Sealant (WP 0108, Table 1, Item 2)
- Tag, Marker (WP 0108, Table 1, Item 17)
- Tape, Antiseizing (WP 0108, Table 1, Item 18)
- Tape, Duct (WP 0108, Table 1, Item 19)

References
- TC 9-237
- TM 9-214
- TM 43-0139
- WP 0073

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

GENERAL

1. This Work Package (WP) contains general shop practices and specific methods you must be familiar with to properly maintain your trailer. You should read and understand these practices and methods before performing any maintenance tasks.
2. Before beginning a task, find out how much repair, modification, or replacement is needed to fix the equipment. Sometimes the reason for equipment failure can be seen right away and complete teardown is not necessary. Disassemble equipment only as far as necessary to repair or replace damaged or broken parts.
3. Resources are not listed in the initial setup unless they apply to the procedure.
4. All tags and forms attached to equipment must be checked to learn the reason for equipment's removal from service. Modification Work Orders (MWOs) and Technical Bulletins (TBs) must also be checked for equipment changes and updates.
5. In some cases, a part may be damaged by removal. If the part appears to be good, and other parts behind it are not defective, leave it on and continue with the procedure. Here are a few simple rules:
    a. DO NOT remove dowel pins or studs unless loose, bent, broken, or otherwise damaged.
    b. DO NOT remove bearings or bushings unless damaged. If you need to remove them to access parts behind, pull bearings and bushings out carefully.
    c. Replace all gaskets, seals, preformed packings, lockwashers, cotter pins, and other locking hardware.
    d. Ensure all parts are lubricated as specified in WP 0073.

END OF TASK

WORK SAFETY

1. Review all warnings, cautions, and notes prior to performing the maintenance task.
2. Before beginning a procedure, think about the safety risks and hazards to yourself and to others. Wear protective gear such as eye protection, safety shoes, or gloves.
3. Before beginning a procedure, ensure that the following conditions have been observed, unless otherwise specified:
    a. Trailer, if coupled, should be parked on level ground with prime mover parking brake set.
    b. Engine must be off if prime mover is coupled to trailer, unless otherwise indicated.
    c. Components must be at operating temperature to be tested.
4. Immediately clean up spilled fluids to avoid slipping. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
5. When lifting heavy parts, have someone help you. Ensure that lifting equipment or jack is working properly, that it meets weight requirement of part being lifted, and that it is securely fastened to part.
6. Always use power tools carefully.

END OF TASK

CLEANING INSTRUCTIONS

WARNING

Improper cleaning methods and use of unauthorized cleaning liquids or solvents can injure personnel and damage equipment. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

1. **General.** Cleaning instructions will be the same for a majority of parts and components that make up the trailer. The following should apply to all cleaning operations:
   a. Clean all parts before inspection, after repair, and before assembly.
   b. Keep hands free of grease, which can collect dust, dirt, and grit.
   c. After cleaning, all parts should be covered or wrapped to protect them from dust and dirt. Parts that are subject to rust should be lightly oiled.
2. **Cleaning.**
   a. Before cleaning exterior of trailer, protect all electrical equipment that could be damaged by steam or moisture.
   b. Place disassembled parts in a suitable container to clean. Parts that are subject to rust should be dried and lightly oiled after cleaning.

CLEANING INSTRUCTIONS - Continued

WARNING

- Solvent cleaning compound MIL-PRF-680 may be irritating to the eyes and skin. Wear protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Use solvent cleaning compound MIL-PRF-680 in a well-ventilated area. Use respirator as needed. Accidental ingestion can cause irritation of digestive tract and respiratory tract. May cause lung and central nervous system damage. Can be fatal if swallowed. Inhalation of high/massive concentrations can cause coma or be fatal. First aid for ingestion: DO NOT induce vomiting. Seek immediate medical attention. First aid for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- MIL-PRF-680 solvent is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Improper cleaning methods and use of unauthorized cleaning liquids or solvents can injure personnel and damage equipment. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of in accordance with authorized facility procedures. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

3. **Castings, Forgings, and Machined Metal Parts.**
   a. Clean inner and outer surfaces with solvent cleaning compound and dry with clean rags.
   b. Remove grease and accumulated deposits with a scrub brush.

CLEANING INSTRUCTIONS - Continued

WARNING

Particles blown by compressed air are hazardous. DO NOT exceed 15 psi (103 kPa) nozzle pressure when drying parts with compressed air. Use a maximum of 30 psi (207 kPa) when cleaning components. DO NOT direct compressed air against human skin. To prevent injury, user must wear eye protection or face shield. Ensure air stream is directed away from user and other personnel in the area. Failure to comply may result in personnel injury. Seek medical attention in event of injury.

CAUTION

DO NOT wash electrical cables or flexible hoses with solvent cleaning compound or mineral spirits. Serious damage or destruction of material will occur. Failure to comply may result in equipment damage.

4. **Flexible Hoses.** Wash flexible hoses with a solution of detergent and water, and wipe dry with clean rags.
5. **General Cleaning Covered by Other Manuals.** Refer to your unit's authorized cleaning and solvents list.

END OF TASK

PRESERVATION OF PARTS

Unpainted metal parts that will not be installed immediately after cleaning should be covered with a thin coat of lubricating oil.

END OF TASK

PAINTING

On painted areas where paint has been removed, paint in accordance with procedures outlined in TM 43-0139.

END OF TASK

INSPECTION INSTRUCTIONS

NOTE

During inspection, all damaged areas should be clearly marked for repair or replacement.

1. All components and parts must be carefully checked to determine if they are serviceable for use, can be repaired, or must be scrapped.
2. Inspect drilled and tapped (threaded) holes for the following:
   a. Wear, distortion, cracks, and any other damage in or around holes.
   b. Threaded areas for wear distortion (stretching) and evidence of cross-threading.
3. Inspect metal lines, flexible lines or hoses, and metal fittings and connectors for the following:
   a. Metal lines for sharp kinks, cracks, bad bends, and dents.
   b. Flexible lines or hoses for fraying, evidence of leakage, and loose metal fittings or connectors.
   c. Metal fittings and connectors for thread damage and worn or rounded hex heads.

INSPECTION INSTRUCTIONS - Continued

4. Inspect castings, forgings, and machined metal parts for the following:
    a. Machined surfaces for nicks, burrs, scoring, grooves, raised metal wear, and other damage.
    b. Inner and outer surfaces for breaks and cracks.
5. Inspect bearings in accordance with TM 9-214.

END OF TASK

DISASSEMBLY AND ASSEMBLY INSTRUCTIONS

Follow these general practices when performing disassembly and assembly procedures.

1. Keep major components together whenever possible and practical.
2. Tag hoses, electrical wires, cables, and harnesses to identify them and aid during installation.
3. Keep related parts together for identification purposes.
4. Temporarily install attaching hardware such as screws, bolts, flat washers, and nuts to prevent loss.
5. Only disassemble to the point of the problem.
6. Ensure that parts are clean, serviceable, and lubricated before assembly.

END OF TASK

LUBRICATION INSTRUCTIONS

For detailed illustrated instruction on proper lubrication, refer to WP 0073. The following are some general practices to use:

1. Always use the correct lubricant.
2. Keep lubricants clean.
3. Clean all fittings prior to lubrication.
4. Lubricate clean, disassembled, and new parts to prevent rust.

END OF TASK

APPLICATION OF ADHESIVES

1. **General.** Adhesives are recommended in some tasks to ensure and strengthen seals. The following information describes their correct use and application.
2. **Silicone Sealant.** Silicone sealant is used to seal parts against moisture. Use the following instructions when applying:
    a. Any time a seal is broken, the part must be thoroughly cleaned to remove any remaining sealing compound and dirt.
    b. Thoroughly clean surface before applying sealant.
    c. When applying a sealant, ensure that the area is completely covered. Press sealant into and around parts as necessary.
    d. Silicone sealant will set in 15 to 30 minutes depending on temperature and humidity.

APPLICATION OF ADHESIVES - Continued

WARNING

- Sealing compounds and adhesives are toxic and flammable. Always use in well-ventilated areas, away from heat, sparks, and flames. DO NOT breathe fumes. When not using sealing compounds and adhesives, ensure container is closed. Continued exposure can cause dizziness and irritate your eyes and throat. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Sealing compounds and adhesives bond immediately on contact with eyes, skin, or clothing. DO NOT allow compounds to contact skin or eyes. Use eye protection or face shield and protective gloves. If sealing compound or adhesive contacts eyes, try to keep eyes open and flush with water for 15 minutes. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

3. **Adhesive.** Adhesive provides a seal against leakage and a resistance to loosening when used in the assembly of threaded, slip-fitted, or press-fitted parts. Always use grade of adhesive specified and never use when other retaining means are provided, such as lockwires, lockwashers, lockplates, and fasteners. DO NOT use adhesive on brass fittings, plugs, or items that need frequent servicing or when operating temperature exceeds 300°F (149°C). Apply adhesive as follows:
   a. Before application, clean threads to remove oil, grease, and metal chips.
   b. Apply adhesive to second and third threads. DO NOT apply to first thread to ensure system cleanliness.
   c. Adhesive will dry in 6 to 24 hours at ambient temperature.
   d. Adjustments for elbows, gauges, and valves can be made up to 24 hours after application without affecting the seal.

END OF TASK

STANDARD TOOL REQUIREMENTS

1. The following are general practices regarding the use of tools:
   a. Always use the proper tool kit and tools for the procedure being performed.
   b. Ensure that tools are clean and lubricated to reduce wear and to prevent rust.
   c. Keep track of tools. DO NOT be careless with them.

STANDARD TOOL REQUIREMENTS - Continued

d. Return tools to tool box when finished with repair or maintenance.

e. Return tool boxes and tools to tool storage when not in use.

f. Inventory tools before and after each use.

2. Some maintenance tasks may require special or fabricated tools. The "Initial Setup" of the procedure will specify any special or fabricated tools needed to perform that procedure. Use these special tools only for the maintenance procedures for which they are designed or called out. If you are unfamiliar with a required tool, see your supervisor.

END OF TASK

TAGGING WIRES AND HOSES

1. Use marker tags to identify all electrical wires, lines, and any other parts which may be hard to identify or replace later. Fasten tags to parts during removal by wrapping wire fasteners around or through parts and twisting ends together. Position tags to be out of the way during cleaning, inspection, and repair. Mark tags with a pencil, pen, or marker.
2. Whenever possible, identify electrical wires with the number of the terminal or wire to which it connects. If no markings can be found, tag both wires, or wire and terminal, and use the same identifying mark for both. If you cannot tag a wire because it must fit through a small hole, or you cannot reach it, write down the description of the wire and point to which it connects or draw a simple diagram on paper. Be sure to write down enough information so you will be able to properly connect the wires during assembly. If you need to identify a loose wire, look for identifying numbers near the end of the wire, stamped on a permanent metal tag. Compare this number to wire numbers on the appropriate electrical schematic.
3. Identify lines when you are taking off more than one line at the same time. Mark tags with points to which lines and hoses must be connected. If it is not obvious which end of a line goes where, tag each end of the line.
4. Identify and tag other parts as required by name and installed location.

END OF TASK

ANTISEIZING TAPE

CAUTION

Only apply antiseizing tape to pipe threads on male fittings of the air system. Failure to comply may result in equipment damage.

NOTE

When connecting air lines and fittings without compression sleeves or packings, antiseizing tape may be used to keep connections from leaking. Perform Steps 1 through 4.

1. Ensure that threads are clean and dry.
2. Start antiseizing tape one or two threads from small or leading edge of fitting, joining tape together with an overlap of about 0.125 in. (3.18 mm) for fittings with fine threads. For fittings with coarse threads, tape should be wrapped around threads two or three times.
3. Tightly wrap antiseizing tape in same direction as you would tighten a nut. Tape must be pressed into threads without cutting or ripping.

ANTISEIZING TAPE - Continued

CAUTION

DO NOT exceed specified torque or use power tools to tighten fittings taped with antiseizing tape. Over-tightening could damage fitting threads and cause connection to leak. Failure to comply may result in equipment damage.

4. Use hand tools to tighten fittings to specified torque.

END OF TASK

TUBES AND COMPRESSION FITTINGS

1. **Standard Compression Fittings:**Tubes with inverted nuts and compression fittings are designed for one-time assembly. Once assembled or disassembled, they must be replaced as a unit if any parts are found defective. Used parts may not seal properly when used with new ones. Used tube assemblies in good condition can be reinstalled to their original location without leaking. Assemble new tubes, compression sleeves, and inverted nuts as follows:
   a. Slide inverted nut (Figure 1, Item 2) on end of tube (Figure 1, Item 3).
   b. Slide compression sleeve (Figure 1, Item 1) on end of tube (Figure 1, Item 3).
   c. Repeat Steps a and b for other end of tube as required.
   d. Insert end of tube as far as it will go in compression fitting to which tube is being installed.
   e. Twist inverted nut (Figure 1, Item 2) in compression fitting and tighten inverted nut against compression sleeve (Figure 1, Item 1) with open-end wrench. Compression sleeve will clamp down around tube and conform to internal surface of compression fitting and inverted nut.
   f. Repeat Steps d and e for other end of tube as required.

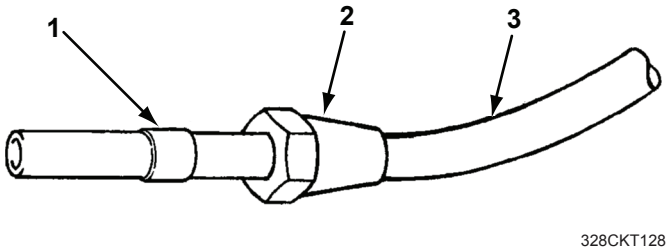


Figure 1. Compression Fitting.

2. **Push-In Fittings:** Fittings are used for some of the connections at the spring brake control valve. A push-on collet collar grips or releases the tubing as required to provide a quick disconnect/ connect feature of the air line tubing to the fitting, without the use of tools. To separate tubing from fitting, depress the fitting collar until it bottoms against the fitting and withdraw the tubing. To assemble tubing onto fitting, insert the tubing into the fitting until it bottoms, pushing on tubing twice to verify that tubing is inserted past collet and O-ring. Pull fitting collar out to lock tubing and pull on tubing to verify it is locked in place. Tubing cut for insertion into the fitting must be squarely cut. The maximum allowable angle is 15 degrees. Use of a tube cutting tool is recommended.

END OF TASK

LEAKAGE TESTS

1. With air brake system connected, apply soapy water to air lines and fittings. No leakage is permitted.
2. Tighten or replace air lines or fittings if leaks continue.

END OF TASK

FLUID DISPOSAL

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

END OF TASK

SERVICE REPLACEMENT PARTS AND KITS

Many service replacement parts are available in standard sizes as well as various undersized and/or oversized sizes. Service kits for reconditioning certain parts and service sets, which include all parts necessary to complete a procedure, are also available.

END OF TASK

WELDING

WARNING

Chemical Agent Resistant Coating (CARC) paint contains Hexamethylene Diisocyanate (HDI), which is highly irritating to skin and respiratory system. High concentrations of HDI can cause itching, reddening of skin, a burning sensation in throat and nose, and watering of eyes. In extreme concentrations, HDI can cause coughing, shortness of breath, respiratory pain, increased sputum production, and chest tightness. Therefore, observe the following practices when grinding, sanding, cutting, or welding CARC-coated equipment.

- Allow only authorized personnel to weld or cut metals.
- DO NOT leave skin exposed. Wear protective clothing (e.g., gloves, eye protection, and apron).
- Use high-efficiency, air-purifying respirators.
- DO NOT weld or cut CARC- or Water-Dispersible (WD) CARC-coated equipment; first, grind off or sand off CARC paint completely.
- Keep a suitable fire extinguisher nearby.
- Follow requirements of TC 9-237.

Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

CAUTION

If welding trailer, it must be uncoupled from prime mover. Failure to follow this caution may damage electronic components. Failure to comply may result in equipment damage.

Refer to TC 9-237, Operator's Circular Welding Theory and Application, for instructions on welding components.

END OF TASK

ELECTRICAL REPAIR

Specific electrical system maintenance tasks are covered in Chapter 8, Field Maintenance.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
LUBRICATION INSTRUCTIONS

INITIAL SETUP:

Materials/Parts
- Cleaning Solvent, Type II (WP 0108, Table 1, Item 5)
- Grease, Automotive and Artillery (GAA) (WP 0108, Table 1, Item 11)
- Oil, Lubricating, Gear (WP 0108, Table 1, Item 13)
- Oil, Lubricating, 10W Grade, MIL-PRF-21260 (WP 0108, Table 1, Item 14)
- Rag, Wiping (WP 0108, Table 1, Item 15)

References
- DA PAM 750-8

References (cont.)
- TM 4-33.31
- TM 9-214
- WP 0032

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

GENERAL

This Work Package contains lubrication instructions showing location, intervals, and proper materials for lubricating the trailer. These instructions are mandatory.

DETAILED LUBRICATION INFORMATION

WARNING

- Solvent cleaning compound MIL-PRF-680 may be irritating to the eyes and skin. Wear protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Use solvent cleaning compound MIL-PRF-680 in a well-ventilated area. Use respirator as needed. Accidental ingestion can cause irritation of digestive tract and respiratory tract. May cause lung and central nervous system damage. Can be fatal if swallowed. Inhalation of high/massive concentrations can cause coma or be fatal. First aid for ingestion: DO NOT induce vomiting. Seek immediate medical attention. First aid for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- MIL-PRF-680 solvent is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Improper cleaning methods and use of unauthorized cleaning liquids or solvents can injure personnel and damage equipment. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of in accordance with authorized facility procedures. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

CAUTION

DO NOT lubricate suspension system. Failure to comply may result in equipment damage.

NOTE

- Use a drain pan to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids.
- Immediately clean up spilled fluid before proceeding with any task. Refer to local procedures and plans for responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and spilled fluids.

1. Clean lubrication points, grease fittings, and surrounding areas with cleaning solvent before applying lubricant. Clean all lubrication points after lubricating to prevent accumulation of foreign matter. Clean and lubricate bearings as specified in TM 9-214. Keep all external parts not requiring lubrication clean of lubricants.

DETAILED LUBRICATION INFORMATION - Continued

2. Maintain record of vehicle lubrication, and report discrepancies noted during lubrication. Refer to DA PAM 750-8 for maintenance forms and procedures to record and report findings.
3. After parts are cleaned, rinse and dry them thoroughly. Supply a light grade of oil to all polished metal surfaces to prevent rusting.
4. When authorized to install new parts, remove any preservation materials, such as rust preventive compound or protective grease, prior to installation. Apply lubricant prescribed in lubrication instructions if required.

SPECIFIC LUBRICATION INSTRUCTIONS

WARNING

Wipe excess lubricant from area of brake shoe linings to prevent contamination of linings. Replace linings that have been contaminated with lubricant to prevent brake malfunction. Failure to comply may result in personnel death or injury, or equipment damage. Seek medical attention in event of injury.

CAUTION

- Keep all lubricants in closed containers, and store in a clean, dry place away from extreme heat. Keep container covers clean, and DO NOT allow dust, dirt, or other foreign material to mix with lubricants. Keep all lubrication equipment clean and ready for use. Failure to comply may result in equipment damage.
- Keep all external parts of equipment not requiring lubrication clean of lubricants. Grease streaks on the outside or inside of the wheel may indicate overpacking of the grease, an improperly installed grease seal, damage to the axle end, loose hardware, or gasket damage. Failure to comply may result in equipment damage.

1. Refer to TM 4-33.31 for lubrication instructions in cold weather.
2. After operation in mud or in sandy or dusty conditions, or when mission allows, clean and inspect all points of lubrication for fouled lubricants. Change lubricants as required.

LUBRICATION INTERVALS AND CHART

1. Locations of lubrication points on trailer are shown on Figure 1. Intervals are based on normal operation. Adjust to compensate for abnormal and severe conditions or contaminated lubricants. During inactive periods, intervals may be extended commensurate with adequate preservation. Locations of lubrication points on trailer are shown on Figures 1 through 3.
2. Before lubrication, clean fittings using cleaning compound. Dry before lubricating.
3. Relubricate after washing or fording as necessary.

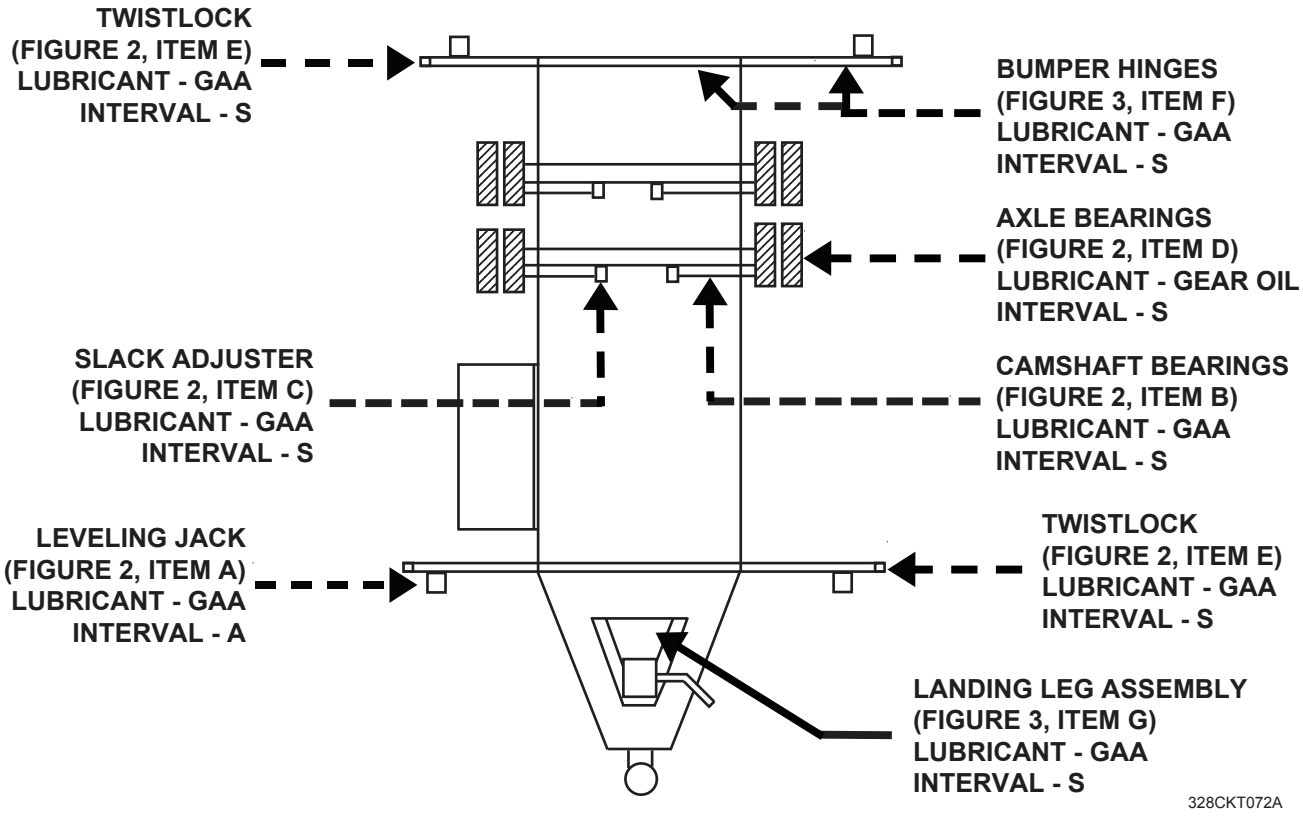


Figure 1. Lubricants and Intervals.

LUBRICATION INTERVALS AND CHART - Continued

NOTE

- DO NOT lubricate springs.
- **INTERVALS —** Lubrication intervals will be regularly scheduled and performed during regular scheduled PMCS services (WP 0032) whenever possible. Semiannual (S) services are performed every six months. Annual (A) services are performed every 12 months.
- **LEVELING JACK —** Annually extend legs, wipe clean and apply GAA to unpainted surfaces.
- **TWISTLOCKS —** Semiannually wipe clean and apply GAA to the twistlock shaft.
- **TOOL BOX HINGES —** Semiannually lubricate the tool box hinges with Oil, 10W Grade.

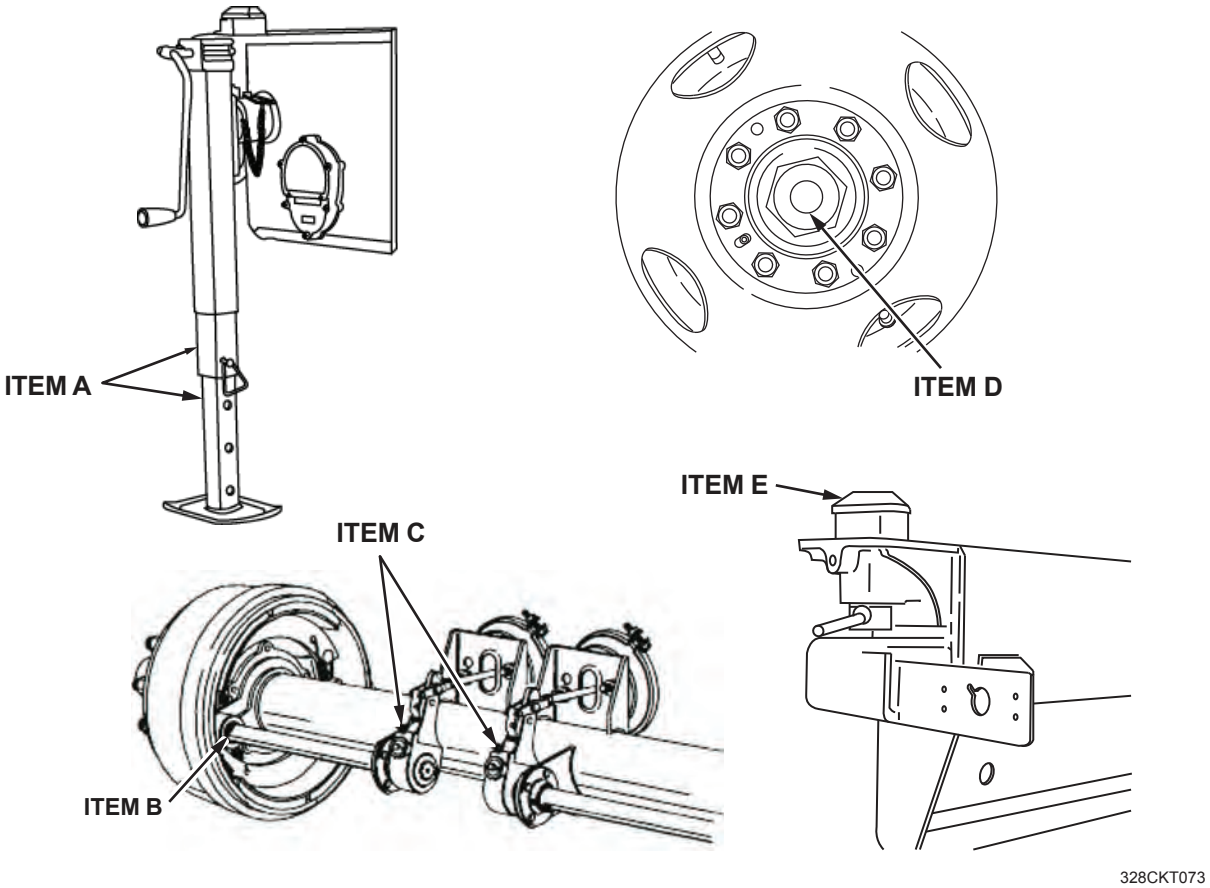


Figure 2. Lubrication Points for Items A, B, C, D, and E.

LUBRICATION INTERVALS AND CHART - Continued

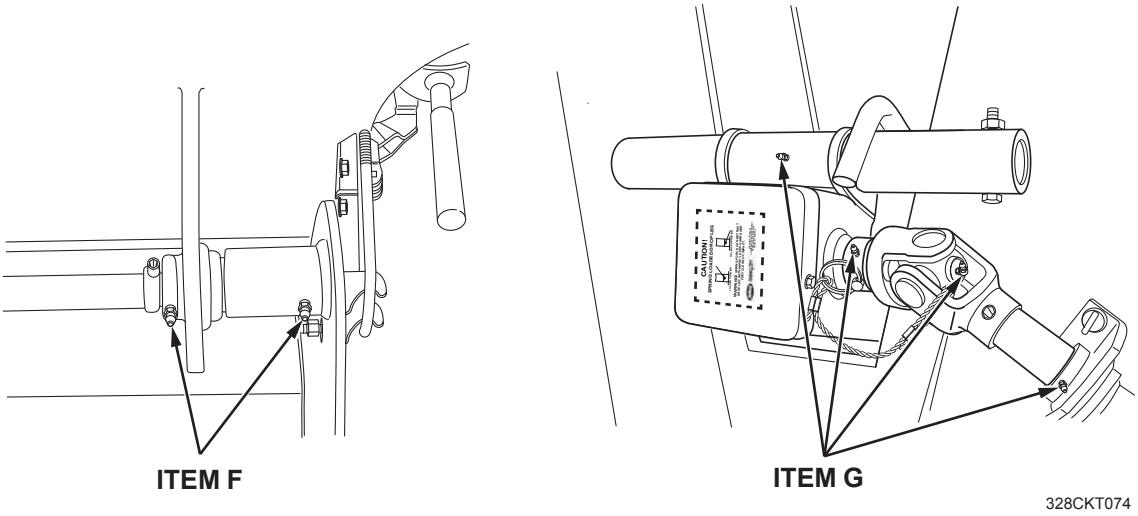


Figure 3. Lubrication Points for Items F and G.

END OF WORK PACKAGE

FIELD MAINTENANCE
TORQUE LIMITS

SCOPE

This Work Package (WP) lists standard torque values and provides general information for applying torque. Special torque values and tightening sequences are indicated in the maintenance procedures for applicable components.

TORQUE VALUES

General

1. Always use torque values listed in Tables 2 and 3 when a maintenance procedure does not give a specific torque value.
   a. Table 2 provides torque limits for SAE standard fasteners.
   b. Table 3 provides torque limits for metric fasteners.
2. Unless otherwise indicated, standard torque tolerance shall be plus or minus 10 percent.

CAUTION

If replacement capscrews are of higher grade than originally supplied, use torque specifications for the original. Failure to comply may result in damage to equipment due to overtorquing.

3. Torque values listed are based on clean, dry threads. Reduce torque by 10 percent when engine oil is used as a lubricant. Reduce torque by 20 percent if new plated capscrews are used.

Tightening Metal Fasteners

When torquing a fastener, select a wrench with a range that fits the required torque value. A torque wrench is most accurate at 25 to 75 percent of its stated range. A wrench with a stated range of 0 to 100 lb-ft (0 to 136 N•m) will be most accurate at 25 to 75 lb-ft (34 to 102 N•m). The accuracy of readings will decrease as you approach 0 lb-ft or 100 lb-ft (136 N•m). Ranges in Table 1 are based on this principle.

Table 1. Metal Fasteners.

STATED RANGE		MOST EFFECTIVE RANGE	
0 to 200 lb-in.	(0 to 23 N•m)	50 to 150 lb-in.	(6 to 17 N•m)
0 to 600 lb-ft	(0 to 813 N•m)	150 to 450 lb-ft	(203 to 610 N•m)
0 to 170 lb-ft	(0 to 230 N•m)	44 to 131 lb-ft	(60 to 178 N•m)
15 to 75 lb-ft	(20 to 102 N•m)	30 to 60 lb-ft	(41 to 81 N•m)

TORQUE VALUES - Continued

Torque Conversion Formulas

When an extension such as a crowfoot or other adapter is added to a torque wrench, the extension changes the distance (radius). A mathematical formula is now used to determine the correct torque readings on the torque wrench to compensate for the added length.

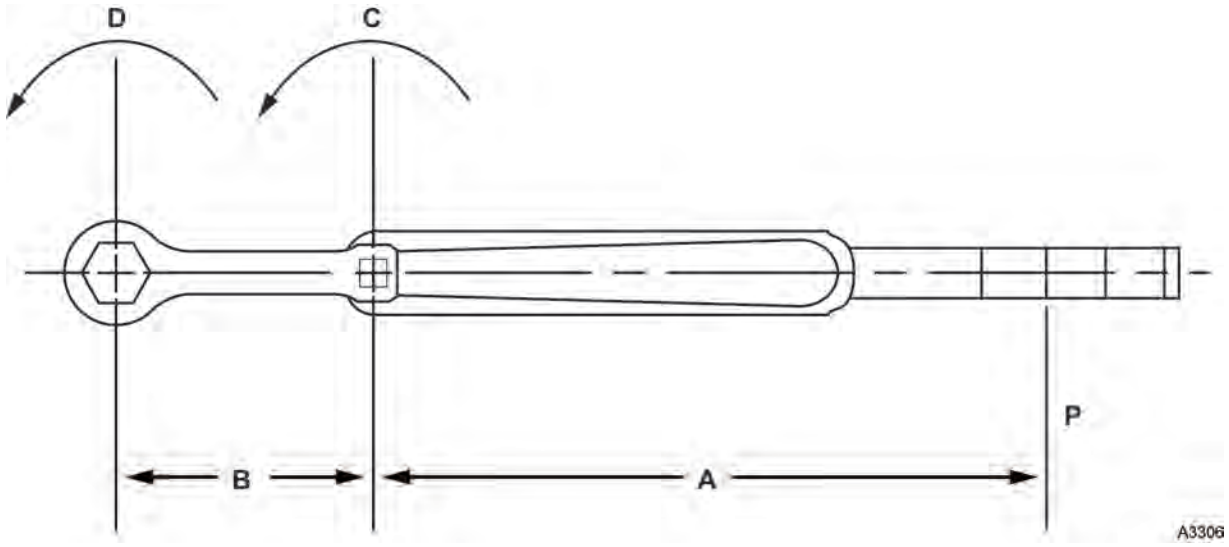


Figure 1. Torque Wrench Adapter Setups.

When an adapter or extension is used on a torque wrench, it increases the torque range of the wrench. The formulas for computing torque when using an adapter or extension are explained below.

A = (Length) Distance from center of torque wrench square drive to center of the puller's hand grip

B = Distance from center of torque wrench square drive to center of drive at end of extension

C = (Torque) Torque wrench setting

D = Torque desired at drive on end of extension

P = (Force) Pull applied

To determine torque wrench setting: **C = (D*A) / (A+B)**

NOTE

After computing **"C"** and setting wrench to computation, measure and mark **"A"** where pull is applied.

It is recommended that the axis of the extension always be used in line with axis of the torque wrench as shown above.

TORQUE VALUES - Continued

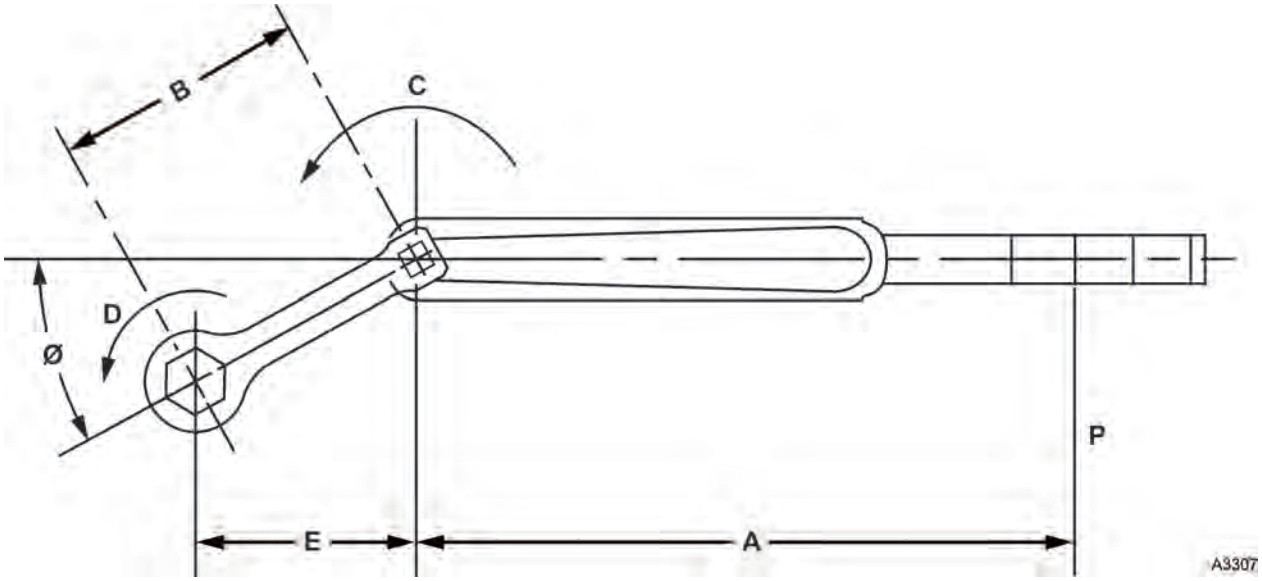


Figure 2. Torque Wrench Formulas.

Should it be necessary, due to obstructions, to have an angle between the two axes, then the above formula is modified as follows. Due to increasing rounding errors, keep the angle as small as possible.

A, B, C, D, and P are the same as above.

E = Effective moment arm of the extension

Ø = Angle between extension axis and torque wrench axis

E = (B) (COS Ø)

Therefore:

C = (D*A) / (A+(B*COS Ø))

When Ø = 0, COS Ø = 1, then equation is reduced to C = (D*A) / (A+B)

When Ø = 90 degrees, COS Ø = 0, then C = D (regardless of the length B)

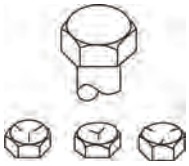
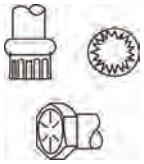
TORQUE VALUES - Continued

Installation and Torquing

1. **Matching Nuts.** Matching nuts require a minimum height equal to the basic diameter of the bolt. The same is true of tapped holes. In tapped softer materials, the depth of the tapped hole should be 1-1/2 times the basic diameter of the bolt.
2. **Threaded Protrusion.** In all installations, bolts, studs, and screws must extend through the nut at least a length equivalent to two complete threads. This applies to both locknuts and plain nuts.
3. **Torquing Locknuts.** To obtain the correct recommended torque value on locknuts, the nut must be tightened until it is one turn from the beginning of seating. At this point, if the torque is less than 1/3 of the recommended torque, it should be disregarded and the nut tightened to the recommended torque value. If the torque is 1/3 or more of the recommended torque, it should be added to the recommended torque. Example: the recommended torque is 50 to 70 lb-in (6 to 8 N•m). The torque at one turn from seating is 30 lb-in (3 N•m). The correct torque wrench reading would be 80 to 100 lb-in (9 to 11 N•m).
4. **Retorquing Fasteners.** Procedures intended for installing metal fasteners can cause incorrect readings when used to check or retorque already installed fasteners during maintenance. Before checking or retorquing an already installed threaded fastener, first mark the fastener and its companion components so the marks are in line. Second, back it off 1/4 turn to loosen it. Torque it to the specification with an even steady pull on the torque wrench. The marks should be in line; if not, the marks will indicate the fastener was undertorqued or overtorqued.
5. **Standard Torque Charts.** Standard torque charts have been established for Dry and Wet torque conditions. Surface variations such as thread roughness, scale paint, lubrication (oil, grease, etc.), hardening, and plating may alter these values considerably. Tables 2 and 3 are standard torque charts.
6. **Grade.** To find the grade of the screw that is to be installed, match the markings on the head to the correct picture of Capscrew Head Markings in Tables 2 and 3. Manufacturers' marks may vary.

TORQUE VALUES - Continued

Table 2. Torque Limits – SAE Standard Fasteners.

QUALITY OF MATERIAL		INDETERMINATE		MINIMUM COMMERCIAL		MEDIUM		BEST COMMERCIAL	
SAE Grade Number		1 or 2		5		6 or 7		8	
Capscrew Head Markings Manufacturers' marks may vary These are all SAE Grade 5 (3 line)									
CAPSCREW BODY SIZE IN. – THREAD		**TORQUE LB-FT (N•m)**		**TORQUE LB-FT (N•m)**		**TORQUE LB-FT (N•m)**		**TORQUE LB-FT (N•m)**	
1/4	20 28	5 6	(7) (8)	8 10	(11) (14)	10	(14)	12 14	(16) (19)
5/16	18 24	11 13	(15) (18)	17 19	(23) (26)	19	(26)	24 27	(33) (37)
3/8	16 24	18 20	(24) (27)	31 35	(42) (47)	34	(46)	44 49	(60) (66)
7/16	14 20	28 30	(38) (41)	49 55	(66) (75)	55	(75)	70 78	(95) (106)
1/2	13 20	39 41	(53) (56)	75 85	(102) (115)	85	(115)	105 120	(142) (163)
9/16	12 18	51 55	(69) (75)	110 120	(149) (163)	120	(163)	155 170	(210) (231)
5/8	11 18	83 95	(113) (129)	150 170	(203) (231)	167	(226)	210 240	(285) (325)
3/4	10 16	105 115	(142) (156)	270 295	(366) (400)	280	(380)	375 420	(508) (569)
7/8	9 14	160 175	(217) (237)	395 435	(536) (590)	440	(597)	605 675	(820) (915)
1	8 14	235 250	(319) (339)	590 660	(800) (895)	660	(895)	910 990	(1,234) (1,342)

TORQUE VALUES - Continued

Table 3. Torque Limits – Metric Fasteners.

THREAD DIAMETER-PITCH	CLASS 8.8 BOLT	CLASS 8 NUT	CLASS 10.9 BOLT	CLASS 10 NUT
	TORQUE LB-FT (N•m)		TORQUE LB-FT (N•m)	
M6	5	(7)	7	(9)
M8	12	(16)	17	(23)
M8 × 1	13	(18)	18	(24)
M10	24	(33)	34	(46)
M10 × 1.25	27	(37)	38	(52)
M12	42	(57)	60	(81)
M12 × 1.5	43	(58)	62	(84)
M14	66	(89)	95	(129)
M14 × 1.5	72	(98)	103	(140)
M16	103	(140)	148	(201)
M16 × 1.5	110	(149)	157	(213)
M18	147	(199)	203	(275)
M18 × 1.5	165	(224)	229	(310)
M20	208	(282)	288	(390)
M20 × 1.5	213	(313)	320	(434)
M22	283	(384)	392	(531)
M22 × 1.5	315	(427)	431	(584)
M24	360	(488)	498	(675)
M24 × 2	392	(531)	542	(735)
M27	527	(715)	729	(988)
M27 × 2	569	(771)	788	(1,068)
M30	715	(969)	990	(1,342)
M30 × 2	792	(1,074)	1,096	(1,486)

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
WIRING DIAGRAMS

INITIAL SETUP:

Not Applicable

TRAILER CHASSIS ELECTRICAL SYSTEM WIRING DIAGRAM

The light assemblies receive power to operate from the prime mover through the intervehicular cable and the main chassis harness.

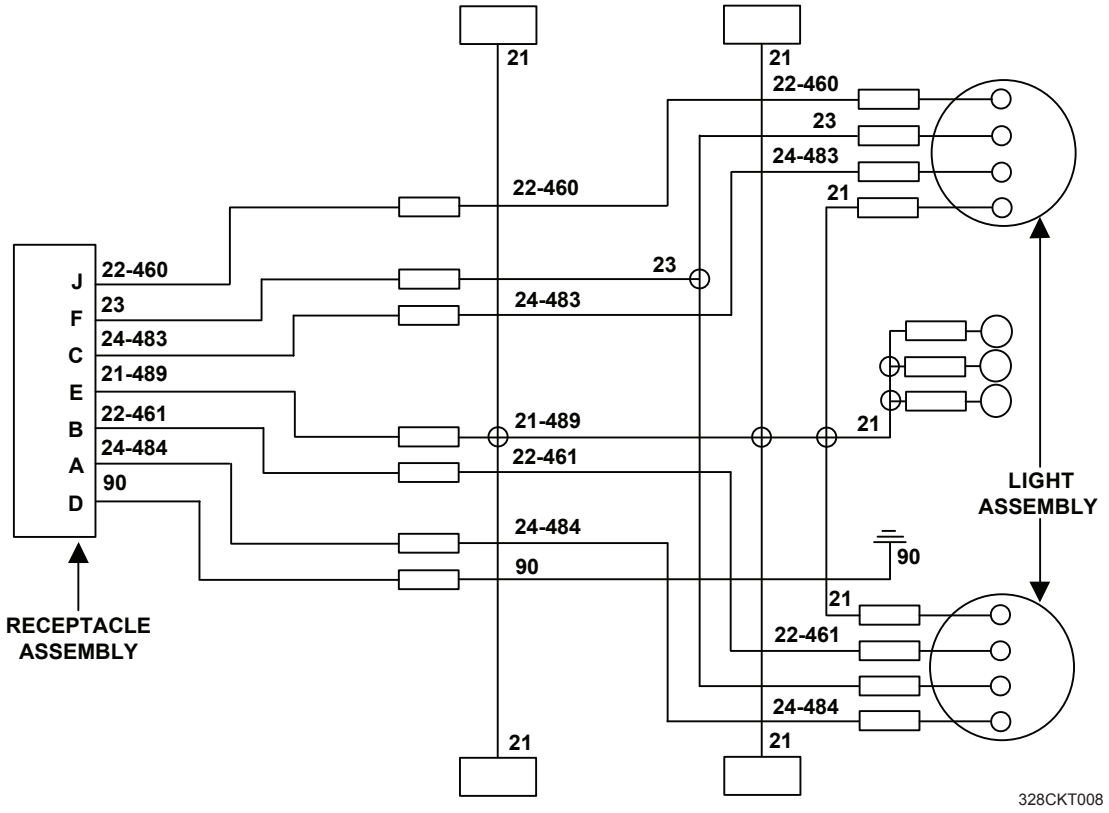


Figure 1. Electrical System Wiring Diagram.

END OF WORK PACKAGE

CHAPTER 9

PARTS INFORMATION

WORK PACKAGE INDEX

Title	WP Sequence No.
REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL) INTRODUCTION	WP 0076
REAR COMPOSITE LIGHT ASSEMBLY	WP 0077
CLEARANCE LIGHT ASSEMBLY	WP 0078
INTERVEHICULAR CABLE	WP 0079
CHASSIS WIRING HARNESS	WP 0080
AXLE	WP 0081
BRAKE ASSEMBLY	WP 0082
AIR BRAKE SYSTEM	WP 0083
AIR COUPLING	WP 0084
RELAY VALVE, TRAILER VALVE, AIR TANK, LINES, AND FITTINGS	WP 0085
HUB AND DRUM ASSEMBLY	WP 0086
TIRES	WP 0087
MUD FLAP	WP 0088
BUMPER	WP 0089
LUNETTE AND SAFETY CHAINS	WP 0090
SPARE TIRE CARRIER	WP 0091
LANDING LEG MODEL XCK2000	WP 0092
LANDING LEG MODEL XCK2000E1	WP 0093
SPRING ASSEMBLY	WP 0094
REFLECTORS	WP 0095
TOOL BOX	WP 0096
ELECTRICAL COVER, INTERVEHICULAR CABLE CLAMP	WP 0097
REAR BUMPER CLAMP MODEL XCK2000E1	WP 0098
IDENTIFICATION/TRANSPORTATION PLATES	WP 0099
REPAIR PARTS KITS	WP 0100
NATIONAL STOCK NUMBER (NSN) INDEX	WP 0101
PART NUMBER (P/N) INDEX	WP 0102

FIELD MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL) INTRODUCTION

SCOPE

This RPSTL lists and authorizes spares and repair parts; special tools; special Test, Measurement, and Diagnostic Equipment (TMDE); and other special support equipment required for performance of Field Maintenance of the XCK2000 and XCK2000E1 trailer. It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the Source, Maintenance, and Recoverability (SMR) codes.

GENERAL

In addition to the Introduction work package, this RPSTL is divided into the following work packages:

1. **Repair Parts List Work Packages.** Work packages containing lists of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. These work packages also include parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Sending units, brackets, filters, and bolts are listed with the component they mount on. Bulk materials are listed by item name in FIG. BULK at the end of the work package. Repair parts kits are listed separately in their own functional group and work packages. Repair for reparable special tools are also listed in a separate work package. Items listed are shown on the associated illustrations.
2. **Special Tools List Work Packages.** Work Packages containing lists of special tools, special TMDE, and special support equipment authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in the DESCRIPTION AND USABLE ON CODE (UOC) Column). Tools that are components of common tool sets and/or Class VII are not listed.
3. **Cross-Reference Indexes Work Packages.** There are two cross-reference indexes work packages in this RPSTL: the National Stock Number (NSN) Index work package (WP 0101) and the Part Number (P/N) Index work package (WP 0102). The NSN Index work package refers you to the figure and item number. The P/N Index work package refers you to the figure and item number.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES

ITEM NO (Column (1)). Indicates the number used to identify items called out in the illustration.

SMR CODE (Column (2)). The SMR code contains supply/requisitioning information, maintenance level authorization criteria, and disposition instruction, as shown in the following breakout. This entry may be subdivided into four subentries, one for each service.

Table 1. SMR Code Explanation.

Source Code XX	Maintenance Code XX		Recoverability Code X
1st two positions: How to get an item.	3rd position: Who can install, replace, or use the item.	4th position: Who can do complete repair* on the item.	5th position: Who determines disposition action on unserviceable items.

***Complete Repair: Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.**

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES - Continued

Source Code. The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follow:

Source Code	Application/Explanation
PA PB PC PD PE PF PG PH PR PZ	**NOTE** Items coded PC are subject to deterioration. Stocked items; use the applicable NSN to requisition/request items with these source codes. They are authorized to the level indicated by the code entered in the third position of the SMR code.
KD KF KB	Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance level indicated in the third position of the SMR code. The complete kit must be requisitioned and applied.
MF - Made at field MH - Made at below depot/sustainment level ML - Made at SRA MD - Made at depot	Items with these codes are not to be requested/requisitioned individually. They must be made from bulk material which is identified by the P/N in the DESCRIPTION AND USABLE ON CODE (UOC) Column and listed in the bulk material functional group of this RPSTL. If the item is authorized to you by the third position of the SMR code, but the source code indicates it is made at a higher level, order the item from the higher level of maintenance.
AF - Assembled by field AH - Assembled by below depot/sustainment level AL - Assembled by SRA AD - Assembled by depot	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the third position of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.
XA	Do not requisition an "XA" coded item. Order the next higher assembly. (Refer to NOTE below.)
XB	If an item is not available from salvage, order it using the Commercial and Government Entity Code (CAGEC) and P/N.
XC	Installation drawings, diagrams, instruction sheets, field service drawings; identified by manufacturer’s P/N.
XD	Item is not stocked. Order an "XD" coded item through local purchase or normal supply channels using the CAGEC and P/N given, if no NSN is available.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those items source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES - Continued

Maintenance Code. Maintenance codes tell you the level(s) of maintenance authorized to use and repair support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

Third Position. The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to the following levels of maintenance:

Maintenance Code	Application/Explanation
C -	Crew maintenance can service, remove, replace, and use the item.
F -	Field maintenance can remove, replace, and use the item.
H -	Below Depot Sustainment maintenance can remove, replace, and use the item.
L -	Specialized Repair Activity (SRA) can remove, replace, and use the item.
K -	Contractor facility can remove, replace, and use the item.
Z -	Item is not authorized to be removed, replaced, or used at any maintenance level.
D -	Depot can remove, replace, and use the item.

Fourth Position. The maintenance code entered in the fourth position tells you whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (perform all authorized repair functions).

NOTE

Some limited repair may be done on the item at a lower level of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.

Maintenance Code	Application/Explanation
F -	Field is the lowest level that can do complete repair of the item.
H -	Below Depot Sustainment is the lowest level that can do complete repair of the item.
L -	SRA is the lowest level that can do complete repair of the item.
D -	Depot is the lowest level that can do complete repair of the item.
K -	Complete repair is done at contractor facility.
Z -	Nonreparable. No repair is authorized.
B -	No repair is authorized. No parts or special tools are authorized for maintenance of "B" coded item. However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES - Continued

Recoverability Code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is shown in the fifth position of the SMR code as follows:

Recoverability Code	Application/Explanation
Z -	Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code.
F -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the field level.
H -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the below depot sustainment level.
D -	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item are not authorized below depot level.
L -	Reparable item. Condemnation and disposal not authorized below SRA.
A -	Item requires special handling or condemnation procedures because of specific reasons (such as precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.
K -	Reparable item. Condemnation and disposal to be performed at contractor facility.

NSN (Column (3)). The NSN for the item is listed in this column.

CAGEC (Column (4)). The CAGEC is a five-digit code which is used to identify the manufacturer, distributor, or Government agency/activity that supplies the item.

PART NUMBER (Column (5)). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different P/N from the number listed.

DESCRIPTION AND USABLE ON CODE (UOC) (Column (6)).

This column includes the following information:

1. The federal item name and, when required, a minimum description to identify the item.

2. P/Ns of bulk materials are referenced in this column in the line entry to be manufactured or fabricated.

3. Hardness Critical Item (HCI). A support item that provides the equipment with special protection from Electromagnetic Pulse (EMP) damage during a nuclear attack.

4. The statement END OF FIGURE appears just below the last item description in Column (6) for a given figure in both the repair parts list and special tools list work packages.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES - Continued

QTY (Column (7)). The QTY (quantity per figure) Column indicates the quantity of the item used in the breakout shown on the illustration/figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column instead of a quantity indicates that the quantity is variable and quantity may change from application to application.

EXPLANATION OF CROSS-REFERENCE INDEXES WORK PACKAGES FORMAT AND COLUMNS

1. **NATIONAL STOCK NUMBER (NSN) INDEX Work Package.** NSNs in this index are listed in National Item Identification Number (NIIN) sequence.

   STOCK NUMBER Column. This column lists the NSN in NIIN sequence. The NIIN consists of the last nine digits of the NSN. When using this column to locate an item, ignore the first four digits of the NSN. However, the complete NSN should be used when ordering items by stock number. For example, if the NSN is 5385-01-574-1476, the NIIN is 01-574-1476.

   FIG. Column. This column lists the number of the figure where the item is identified/located. The figures are in numerical order in the repair parts list and special tools list work packages.

   ITEM Column. The item number identifies the item associated with the figure listed in the adjacent FIG. Column. This item is also identified by the NSN listed on the same line.

2. **PART NUMBER (P/N) INDEX Work Package.** P/Ns in this index are listed in ascending alphanumeric sequence (vertical arrangement of letter and number combination which places the first letter or digit of each group in order "A" through "Z," followed by the numbers "0" through "9" and each following letter or digit in like order).

   PART NUMBER Column. Indicates the P/N assigned to the item.

   FIG. Column. This column lists the number of the figure where the item is identified/located in the repair parts list and special tools list work packages.

   ITEM Column. The item number is that number assigned to the item as it appears in the figure referenced in the adjacent FIG. Column.

SPECIAL INFORMATION

UOC. The UOC appears in the lower left corner of the DESCRIPTION Column heading. Usable on codes are shown as "UOC:…" in the DESCRIPTION Column (justified left) on the first line under the applicable item/nomenclature. Uncoded items are applicable to all models. Identification of the UOCs used in the RPSTL are:

Code	Used On
CRV	XCK2000
RAY	XCK2000E1

Fabrication Instructions. Bulk materials required to manufacture items are listed in the bulk material functional group of this RPSTL. P/Ns for bulk material are also referenced in the DESCRIPTION Column of the line item entry for the item to be manufactured/fabricated. Detailed fabrication instructions for items source coded to be manufactured or fabricated are found in TM 9-2330-328-13&P.

SPECIAL INFORMATION - Continued

Index Numbers. Items which have the word BULK in the FIG. Column will have an index number shown in the ITEM NO Column. This index number is a cross-reference between the National Stock Number (NSN) Index work package, the Part Number (P/N) Index work package, and the bulk material list in the repair parts list work package.

HOW TO LOCATE REPAIR PARTS

1. **When NSNs or P/Ns Are Not Known.**

   First. Use the table of contents to determine the assembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and lists are divided into the same groups.

   Second. Find the figure covering the functional group or subfunctional group to which the item belongs.

   Third. Identify the item on the figure and note the number(s).

   Fourth. Look in the repair parts list work packages for the figure and item numbers. The NSNs and P/Ns are on the same line as the associated item numbers.

2. **When NSN Is Known.**

   First. If you have the NSN, look in the STOCK NUMBER column of the NSN Index work package. The NSN Index work package is arranged in NIIN sequence. Note the figure and item number next to the NSN.

   Second. Turn to the figure and locate the item number. Verify that the item is the one you are looking for.

3. **When P/N Is Known.**

   First. If you have the P/N and not the NSN, look in the PART NUMBER Column of the Part Number (P/N) Index work package. Identify the figure and item number.

   Second. Look up the item on the figure in the applicable repair parts list work package.

ABBREVIATIONS

Abbreviation	Explanation
BOI	Basis of Issue
CAGEC	Commercial and Government Entity Code
EMP	Electromagnetic Pulse
FIG	Figure
HCI	Hardness Critical Item
NSN	National Stock Number

ABBREVIATIONS - Continued

NIIN	National Item Identification Number (consists of the last 9 digits of the NSN) PIN.
P/N	Part Number
RPSTL	Repair Parts and Special Tools Lists
SRA	Specialized Repair Activity
SMR	Source, Maintenance, and Recoverability Code
TMDE	Test, Measurement, and Diagnostic Equipment
U/M	Unit of Measure
UOC	Usable on Code
WP	Work Package

NOTE

All quantities of parts in this RPSTL are to the complete vehicle (end item) not the next higher assembly.

END OF WORK PACKAGE

FIELD MAINTENANCE
REAR COMPOSITE LIGHT ASSEMBLY

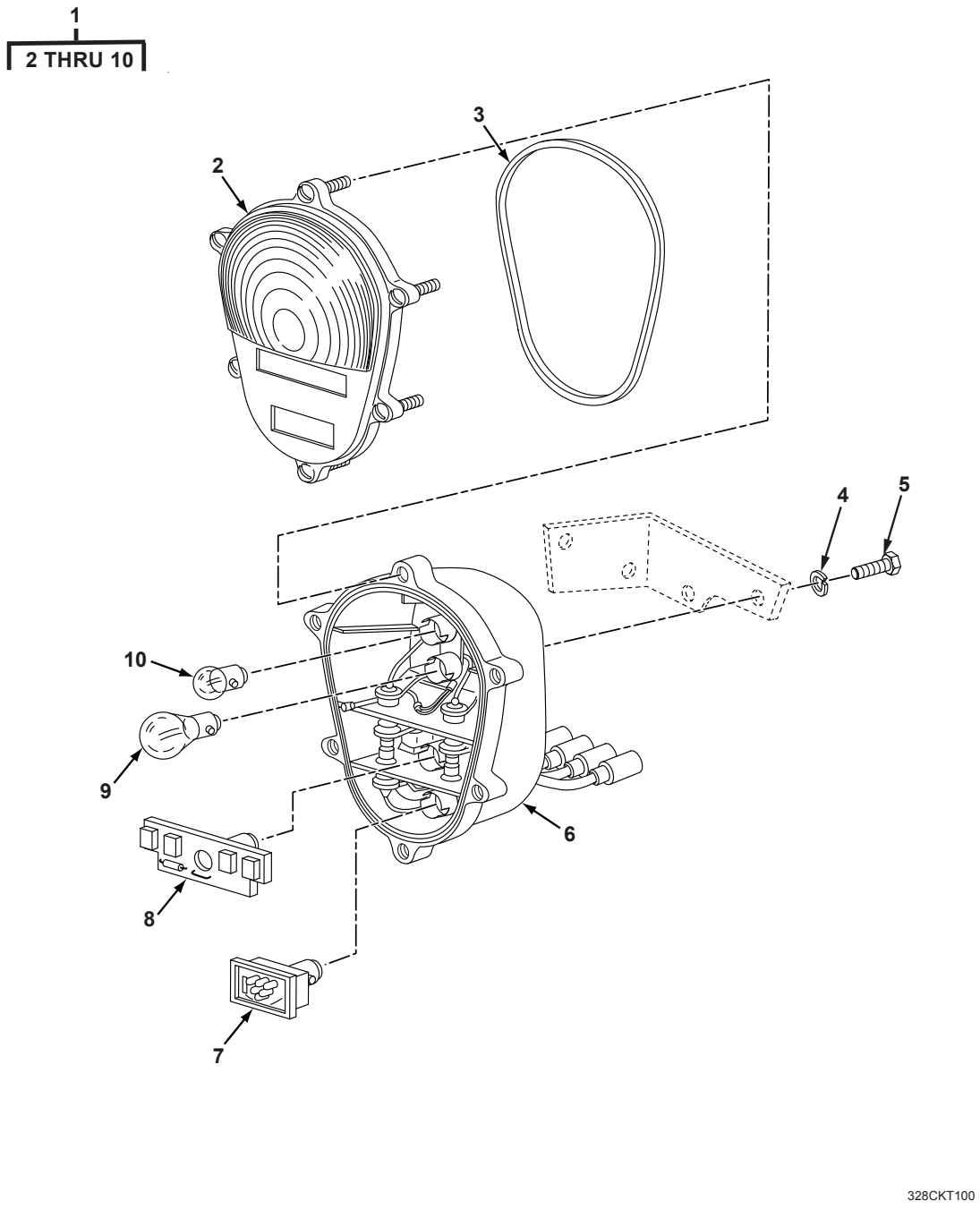


Figure 1. Rear Composite Light Assembly. (Sheet 1 of 2)

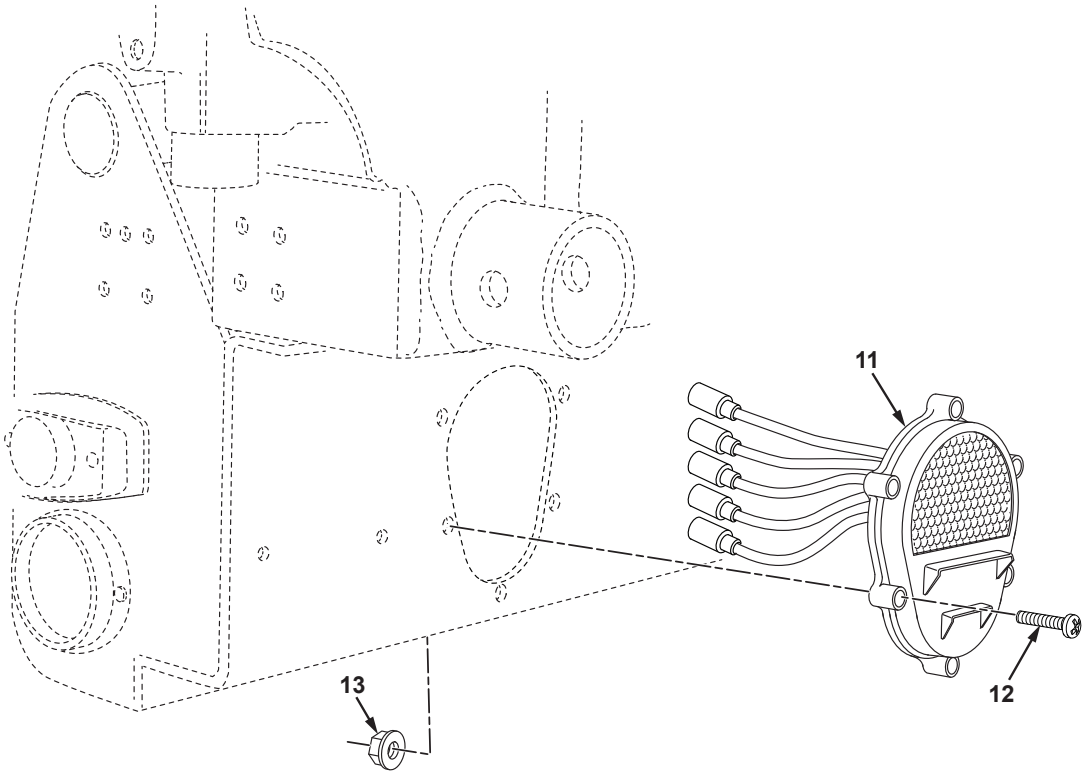
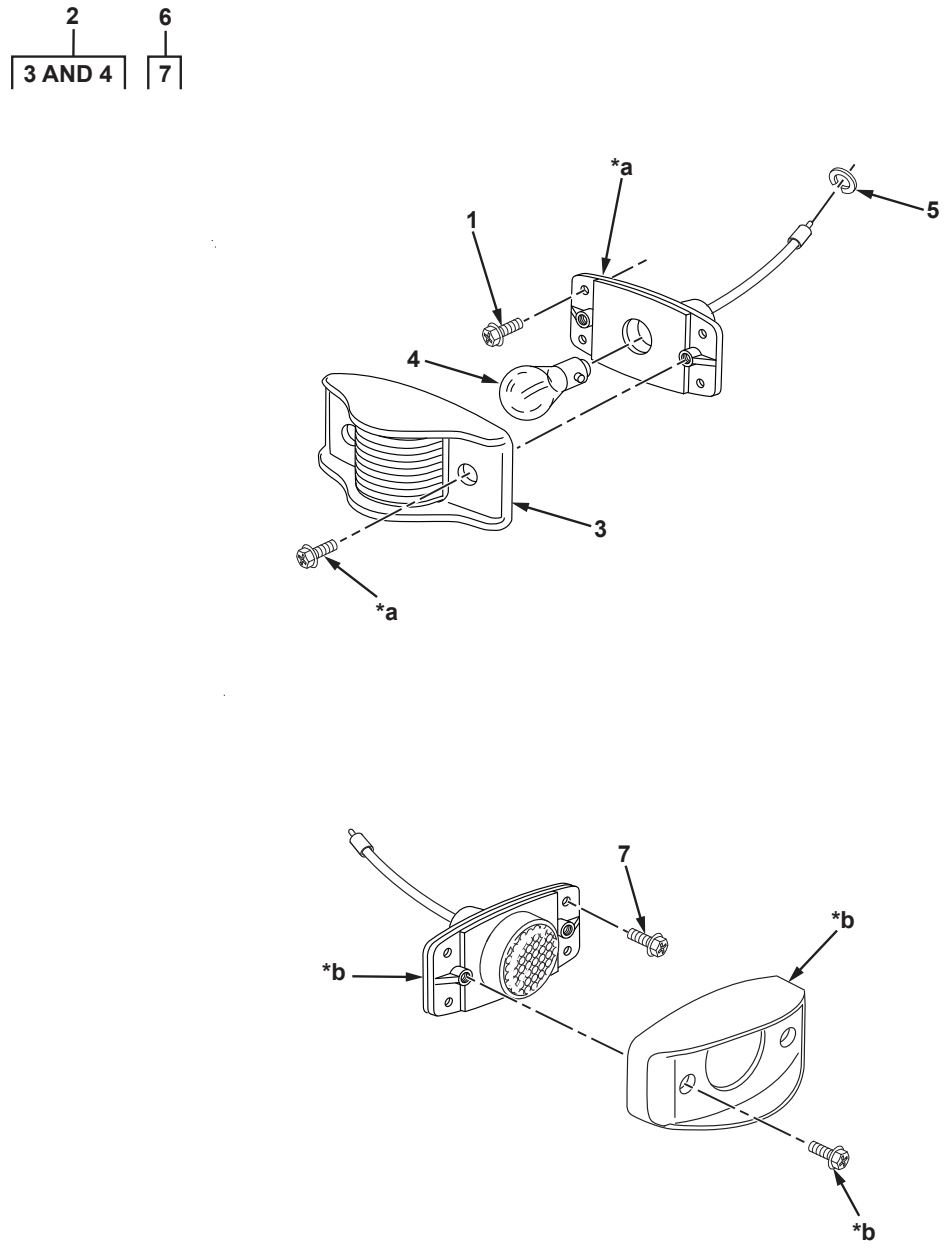


Figure 1. Rear Composite Light Assembly. (Sheet 2 of 2)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0609 LIGHTS	
					FIG. 1. REAR COMPOSITE LIGHT ASSEMBLY	
1	PAFFF	6220-01-093-4439	96906	MS52125-2	STOP LIGHT-TAILLIGH UOC: CRV	2
2	PAFZZ	6220-00-179-4324	19207	11639535	. LENS,LIGHT UOC: CRV	1
3	PCFZZ	5331-00-462-0907	19207	11639519-2	. O-RING UOC: CRV	1
4	PAFZZ	5310-00-637-9541	59556	019-00004-42	. WASHER,LOCK UOC: CRV	2
5	PAFZZ	5305-00-269-3211	80205	MS90725-60	. SCREW,CAP,HEXAGON H UOC: CRV	2
6	PAFZZ	6220-01-067-4717	19207	11639520	. HOUSING,LIGHT UOC: CRV	1
7	PAFZZ	6220-01-297-3217	19207	12360870-2	. STOP LIGHT,VEHICULA UOC: CRV	1
8	PAFZZ	6220-01-284-2709	19207	12360850-1	. LIGHT,MARKER,CLEARA UOC: CRV	1
9	PAFZZ	6240-01-447-3779	58536	AA524463-B10	. LAMP,INCANDESCENT UOC: CRV	1
10	PAFZZ	6240-00-019-3093	58536	AA52463-A09	. LAMP,INCANDESCENT UOC: CRV	1
11	PAFZZ	6220-01-482-9850	13548	07240	STOP LIGHT,VEHICULA UOC: RAY	2
12	PAFZZ	5305-00-984-6214	80205	MS35206-267	SCREW,MACHINE UOC: RAY	12
13	PAFZZ	5310-00-689-3877	80205	MS17829-3C	NUT,SELF-LOCKING,HE UOC: RAY	12
					END OF FIGURE	

FIELD MAINTENANCE
CLEARANCE LIGHT ASSEMBLY



***a Part of Item 2**
***b Part of Item 6**

328CKT102

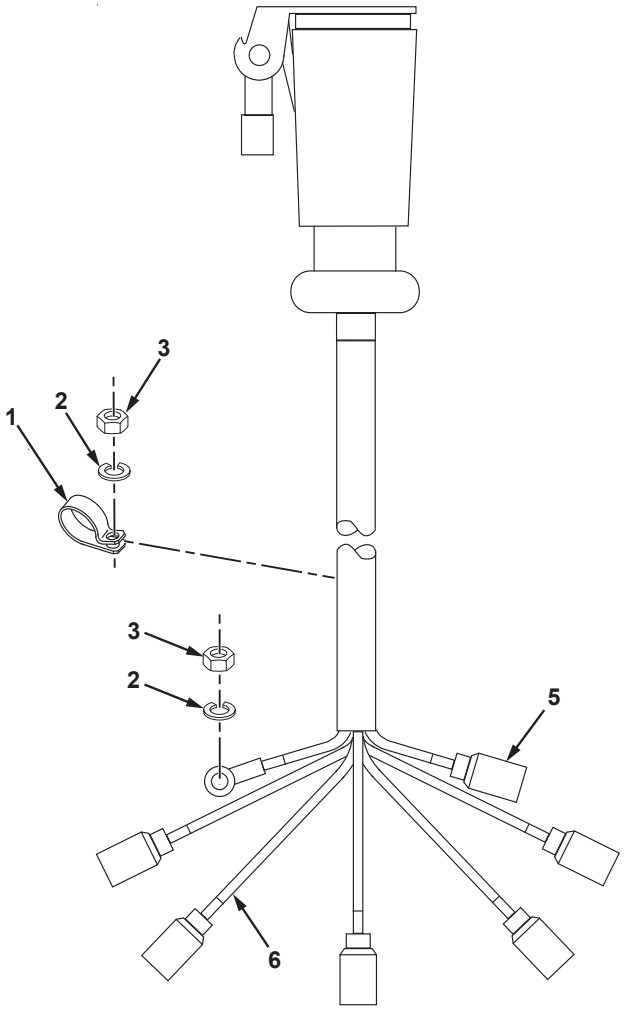
Figure 2. Clearance Light Assembly.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0609 LIGHTS	
					FIG. 2. CLEARANCE LIGHT ASSEMBLY	
1	PFFZZ	5305-00-984-6214	80205	MS35206-267	SCREW,MACHINE UOC: CRV	28
2	PAFFF	6220-00-726-1916	96906	MS35423-2	LIGHT,MARKER,CLEARA AMBER UOC: CRV	5
2	PAFFF	6220-00-577-3434	96906	MS35423-1	LIGHT,MARKER,CLEARA RED UOC: CRV	2
3	PAFZZ	6220-00-299-7425	96906	MS35421-1	. LENS,LIGHT AMBER UOC: CRV	1
3	PAFZZ	6220-00-299-7426	96906	MS35421-2	. LENS,LIGHT RED UOC: CRV	1
4	PAFZZ	6240-00-019-0877	58536	AA52463-A08	. LAMP,INCANDESCENT UOC: CRV	1
5	PAFZZ	5310-00-045-3296	80205	MS35338-43	WASHER,LOCK UOC: CRV	7
6	PAFZZ	6220-01-482-6113	13548	07406	LIGHT,MARKER,CLEARA RED UOC: RAY	5
6	PAFZZ	6220-01-482-5574	13548	07407	LIGHT,MARKER,CLEARA AMBER UOC: RAY	2
7	PAFZZ	5305-00-984-6214	80205	MS35206-267	. SCREW,MACHINE UOC: RAY	4

END OF FIGURE

FIELD MAINTENANCE
INTERVEHICULAR CABLE

4
5 AND 6



328CKT103

Figure 3. Intervehicular Cable.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0613 HULL OR CHASSIS WIRING HARNESS	
					FIG. 3. INTERVEHICULAR CABLE	
1	PAFZZ	5340-01-487-4657	2W888	1-3414	CLAMP,LOOP	1
2	PAFZZ	5310-00-582-5965	80205	MS35338-44	WASHER,LOCK	2
3	PAFZZ	5310-00-761-6882	96906	MS51967-2	NUT,PLAIN,HEXAGON	2
4	PAFZZ	6150-01-487-4967	2W888	1103-1440-01	CABLE ASSEMBLY,SPEC	1
5	PAFZA	5935-00-059-2841	96906	MS75020-1	. CONNECTOR,PLUG,ELEC	6
6	XDFZZ		39428	12405T51	. BAND,MARKER	34
					END OF FIGURE	

FIELD MAINTENANCE
CHASSIS WIRING HARNESS

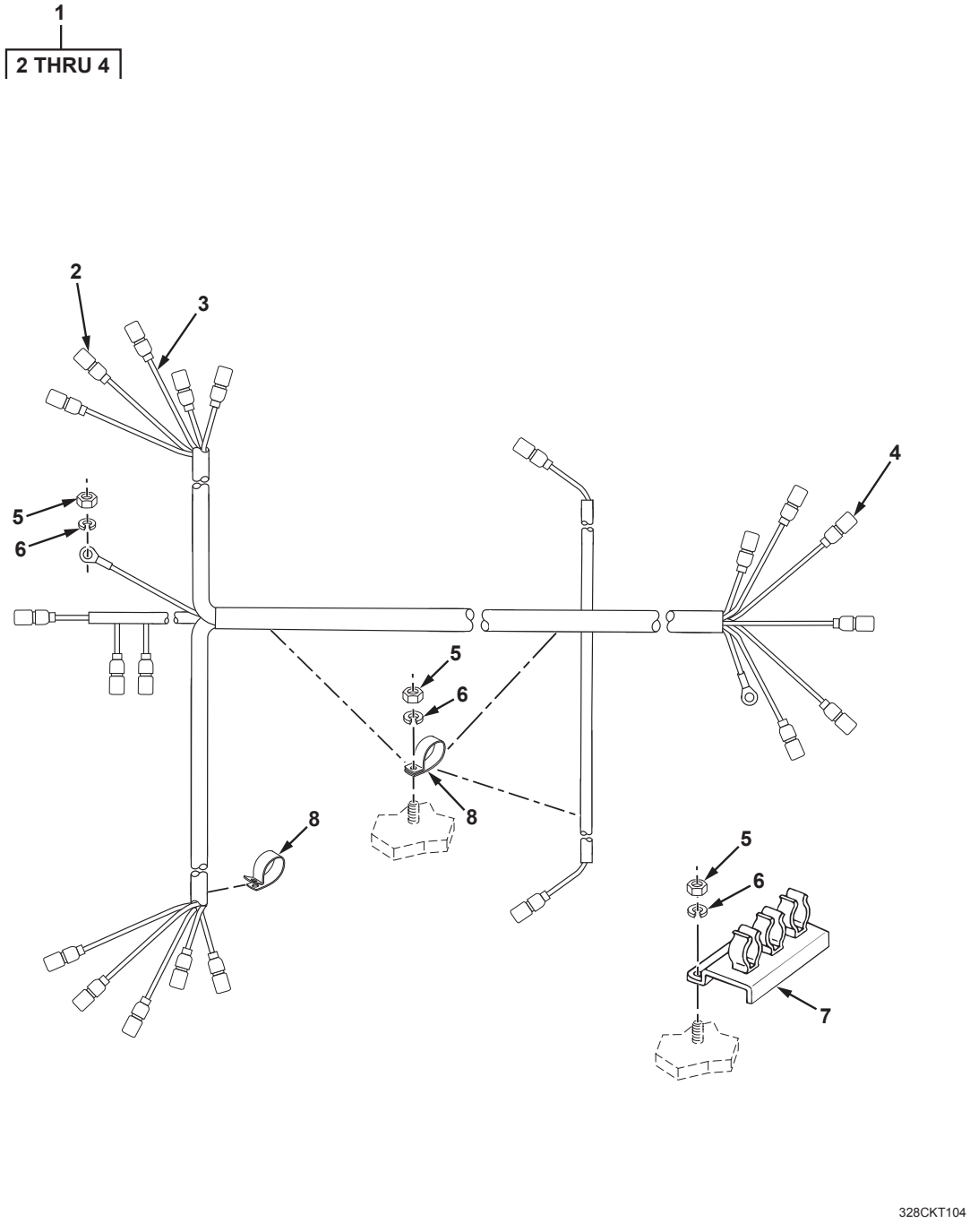
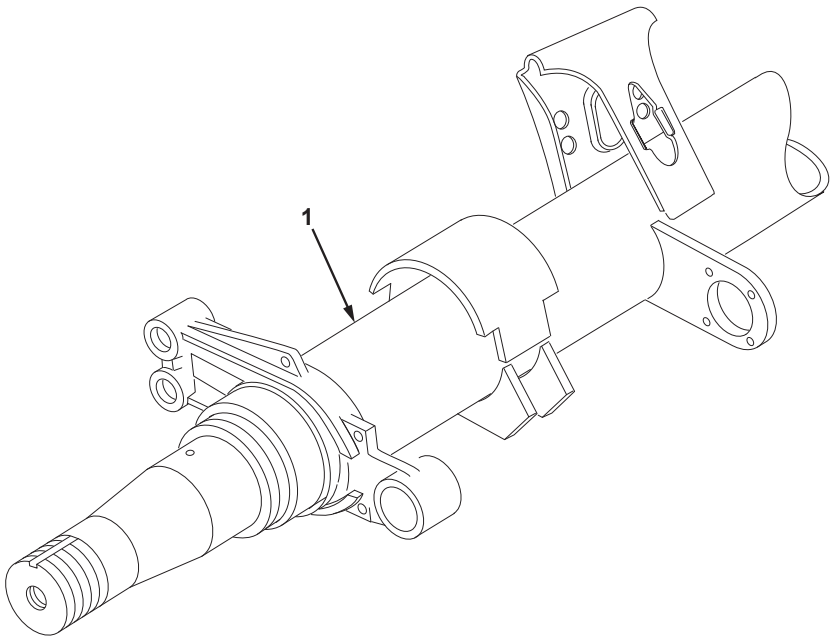


Figure 4. Chassis Wiring Harness.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0613 HULL OR CHASSIS WIRING HARNESS	
					FIG. 4. CHASSIS WIRING HARNESS	
1	PFFFF	6150-01-487-4966	2W888	1103-1430-01	WIRING HARNESS,BRAN	1
2	PAFZZ	5935-00-462-6603	96906	MS27142-2	. CONNECTOR,PLUG,ELEC	20
3	XDFZZ		39428	12405T51	. BAND,MARKER	23
4	PAFZZ	5935-00-167-7775	96906	MS27144-1	. CONNECTOR,PLUG,ELEC	1
5	PAFZZ	5310-00-761-6882	96906	MS51967-2	NUT,PLAIN,HEXAGON	9
6	PAFZZ	5310-00-582-5965	80205	MS35338-44	WASHER,LOCK	9
7	PAFZZ	5340-00-611-7883	19207	8747908	STRAP,RETAINING	1
8	PAFZZ	5340-01-487-4657	2W888	1-3414	CLAMP,LOOP	9
					END OF FIGURE	

FIELD MAINTENANCE
AXLE



328CKT105

Figure 5. Axle.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 1100 REAR AXLE ASSEMBLY	
					FIG. 5. AXLE	
1	XDFZZ		15460	D12000	AXLE, VEHICULAR, NO.....	2
					END OF FIGURE	

FIELD MAINTENANCE
BRAKE ASSEMBLY

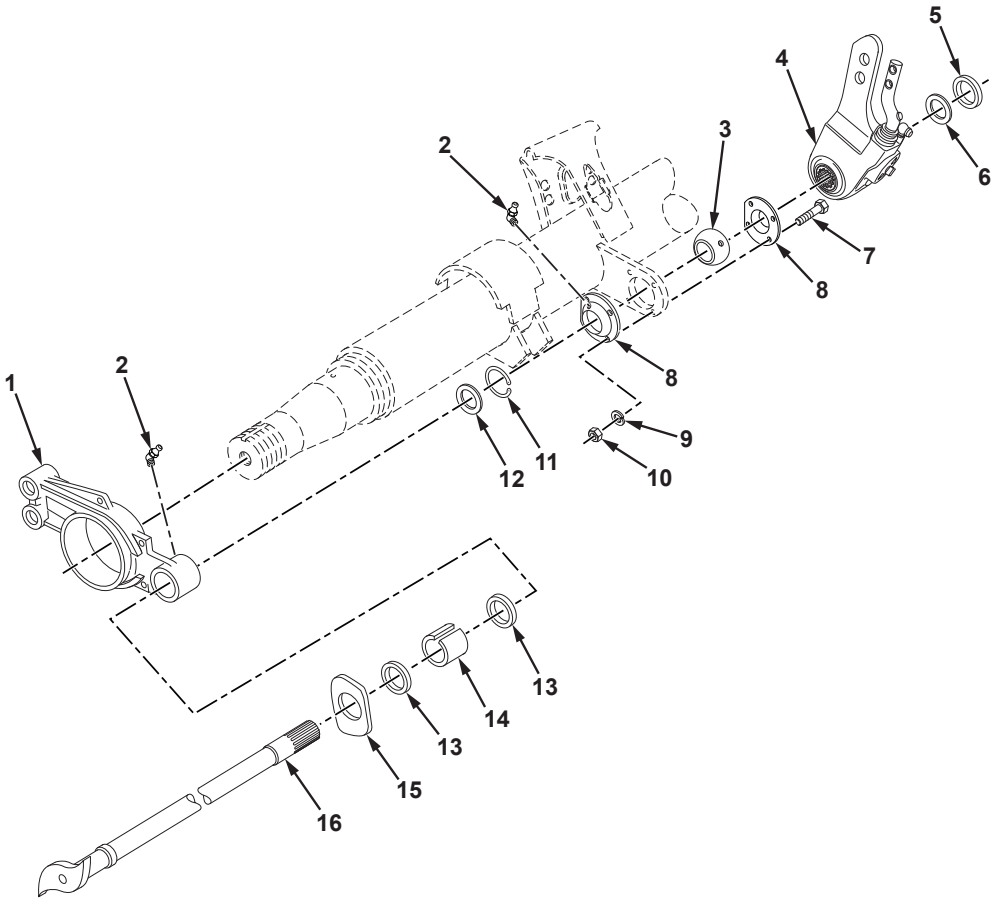


Figure 6. Brake Assembly. (Sheet 1 of 3)

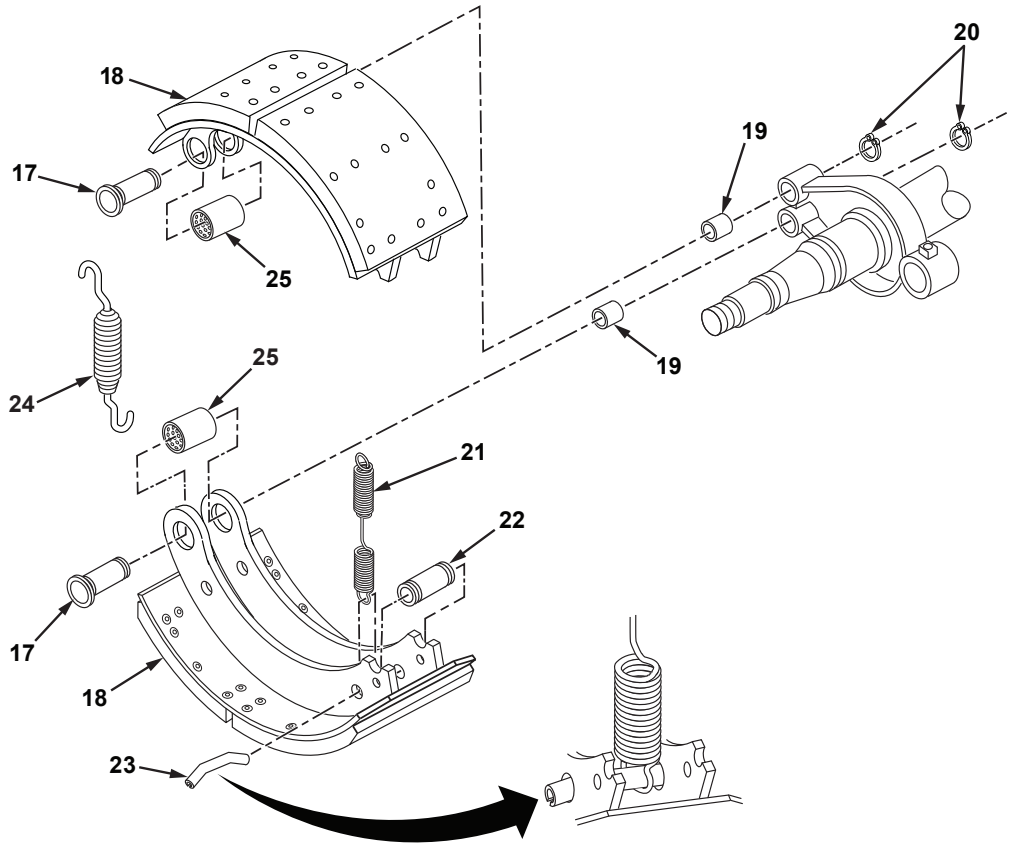
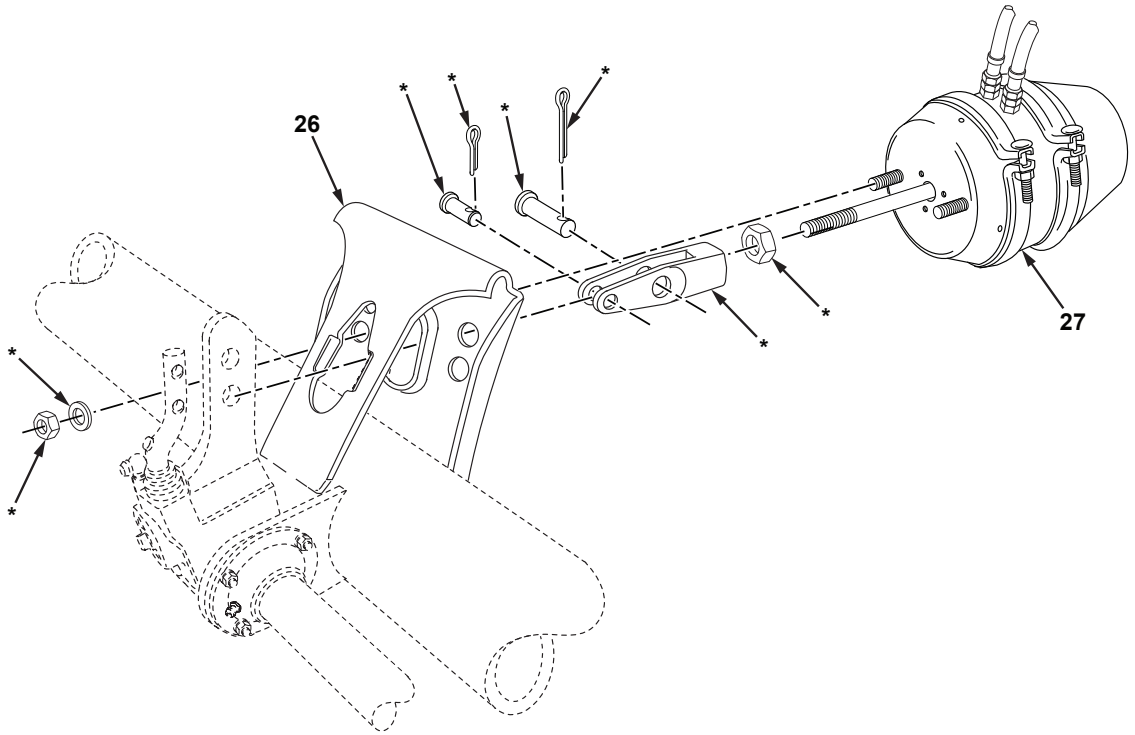


Figure 6. Brake Assembly. (Sheet 2 of 3)



*** Part of Item 27**

328CKT106-3

Figure 6. Brake Assembly. (Sheet 3 of 3)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 1202 SERVICE BRAKES	
					FIG. 6. BRAKE ASSEMBLY	
1	XAFZZ		15460	036-113-02	BRAKE SPIDER	4
2	KFFZZ		15460	061-006-00	FITTING,LUBRICATION PART OF KIT P/N K71-101-00	8
3	KFFZZ		15460	014-058-00	BUSHING,TAPERED PART OF KIT P/N K71-101-00	4
4	PFFZZ	2530-01-487-4633	15460	055-040-07	ADJUSTER,SLACK,BRAK	4
5	KFFZZ		15460	069-078-00	RETAINER,CAMSHAFT PART OF KIT P/N K71-101-00	4
6	KFFZZ		15460	005-134-00	WASHER,FLAT PART OF KIT P/N K71-101-00	4
7	PAFZZ	5306-01-487-5078	15460	007-139-00	BOLT,MACHINE	16
8	PAFZZ	3040-01-528-2535	7M245	034-032-00	PLATE,RETAINING,SHA	8
9	PAFZZ	5310-01-487-4647	15460	005-079-00	WASHER,LOCK	16
10	PAFZZ	5310-01-487-4649	15460	006-099-00	NUT,PLAIN,HEXAGON	16
11	KFFZZ		15460	069-020-00	RING,RETAINING PART OF KIT P/N K71-101-00	4
12	KFFZZ		15460	005-075-00	WASHER,FLAT PART OF KIT P/N K71-101-00	4
13	KFFZZ		15460	010-052-00	SEAL,PLAIN PART OF KIT P/N K71-101-00	8
14	KFFZZ		15460	014-056-00	BUSHING,SLEEVE PART OF KIT P/N K71-101-00	4
15	KFFZZ		15460	005-074-00	WASHER,FLAT PART OF KIT P/N K71-101-00	4
16	XDFZZ		15460	034-188-00	CAMSHAFT, ACTUATING LEFT HAND	2
16	XDFZZ		15460	034-189-00	CAMSHAFT, ACTUATING RIGHT HAND	2
17	KFFZZ		15460	056-010-00	PIN,STRAIGHT,HEADED PART OF KIT P/N K71-460-00	8
18	PAFFF	2530-01-487-4619	15460	040-322-01	BRAKE SHOE	4
18	PAFZZ	2530-01-487-4628	15460	040-322-02	BRAKE SHOE LEFT HAND	4
18	PAFZZ	2530-01-487-4625	15460	040-322-03	BRAKE SHOE RIGHT HAND	4
19	KFFZZ		15460	014-068-00	BUSHING,SLEEVE PART OF KIT P/N K71-460-00	8
20	KFFZZ		15460	069-018-00	RING,RETAINING PART OF KIT P/N K71-460-00	8
21	KFFZZ		15460	046-092-00	SPRING,HELICAL PART OF KIT P/N K71-460-00	4
22	KFFZZ		15460	056-017-00	PIN,SHOULDER,HDLESS PART OF KIT P/N K71-460-00	4

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
23	KFFZZ		15460	056-018-00	PIN,STRAIGHT,HDLESS PART OF KIT P/N K71-460-00	8
24	KFFZZ		15460	046-097-00	SPRING,HELICAL PART OF KIT P/N K71-460-00	4
25	KFFZZ		15460	014-057-00	SPACER,SLEEVE PART OF KIT P/N K71-460-00	8
26	XDFZZ		15460	034-048-00	BRACKET, MOUNTING	4
27	PFFZZ	0000-00-000-0000	15460	034-060-07	CHAMBER,AIR BRAKE	4

END OF FIGURE

FIELD MAINTENANCE
AIR BRAKE SYSTEM

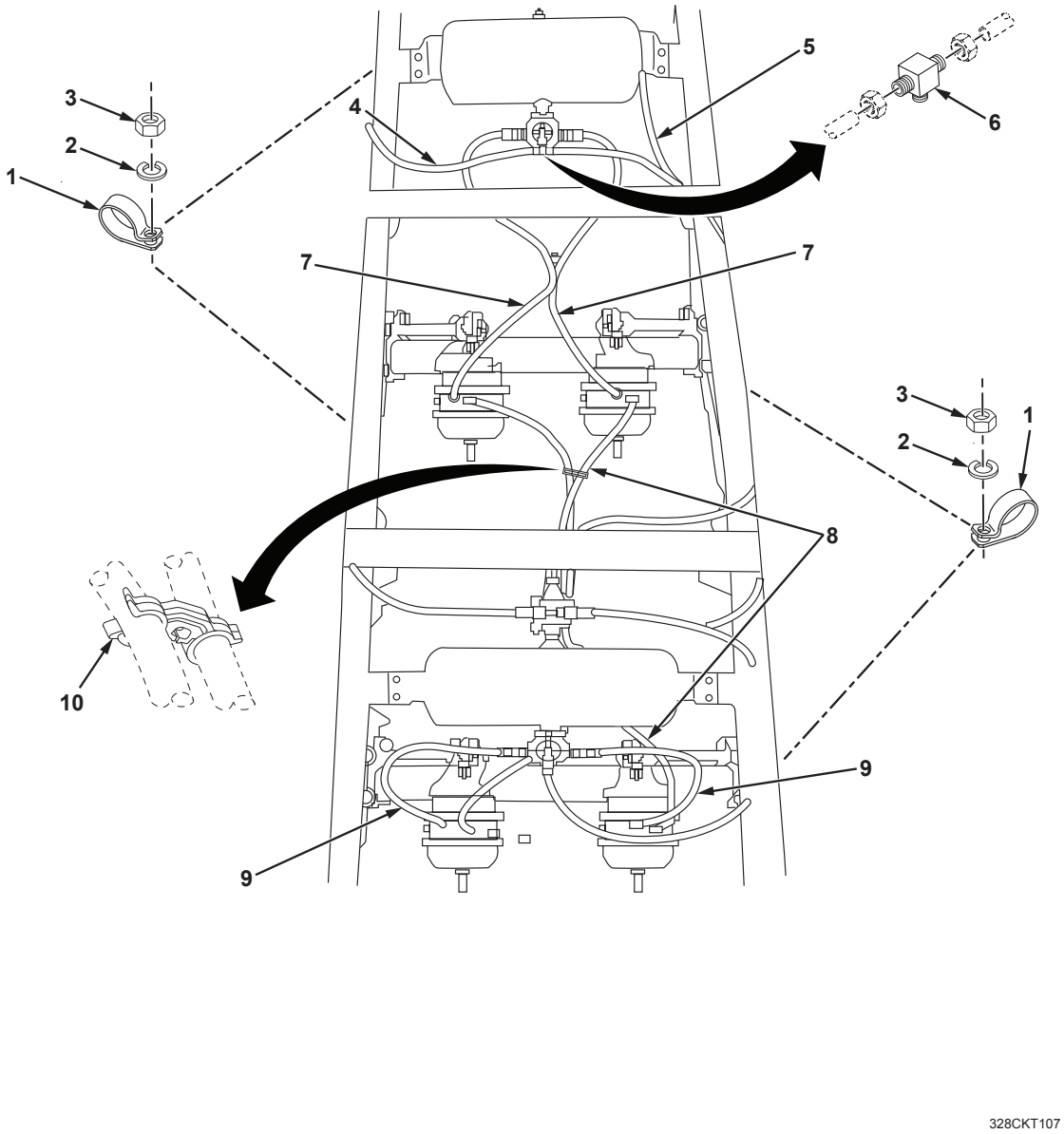


Figure 7. Air Brake System.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 1208 AIR BRAKE SYSTEM	
					FIG. 7. AIR BRAKE SYSTEM	
1	XDFZZ		64466	1-3814	CLAMP,LOOP	6
2	PAFZZ	5310-00-582-5965	80205	MS35338-44	WASHER,LOCK	6
3	PAFZZ	5310-00-761-6882	96906	MS51967-2	NUT,PLAIN,HEXAGON	6
4	PCFZZ	4720-01-182-9067	61424	PFT-6B-BLK-100	TUBING,NONMETALLIC	1
5	PCFZZ	4720-01-182-9068	01276	NT10008BK	TUBING,NONMETALLIC	1
6	PAFZZ	4730-01-095-5833	81343	SAE J246 6-6-6 120425BA	TEE,PIPE TO TUBE	1
7	PCFZZ	4720-01-487-4704	06721	16660	HOSE ASSEMBLY,NONME	2
8	PCFZZ	4720-01-487-4705	06721	16646	HOSE ASSEMBLY,NONME	4
9	PCFZZ	4720-01-225-0661	06721	16628	HOSE ASSEMBLY,NONME	2
10	PAFZZ	4730-01-323-1025	06721	100469D	SEPARATOR,HOSE	8
					END OF FIGURE	

FIELD MAINTENANCE
AIR COUPLING

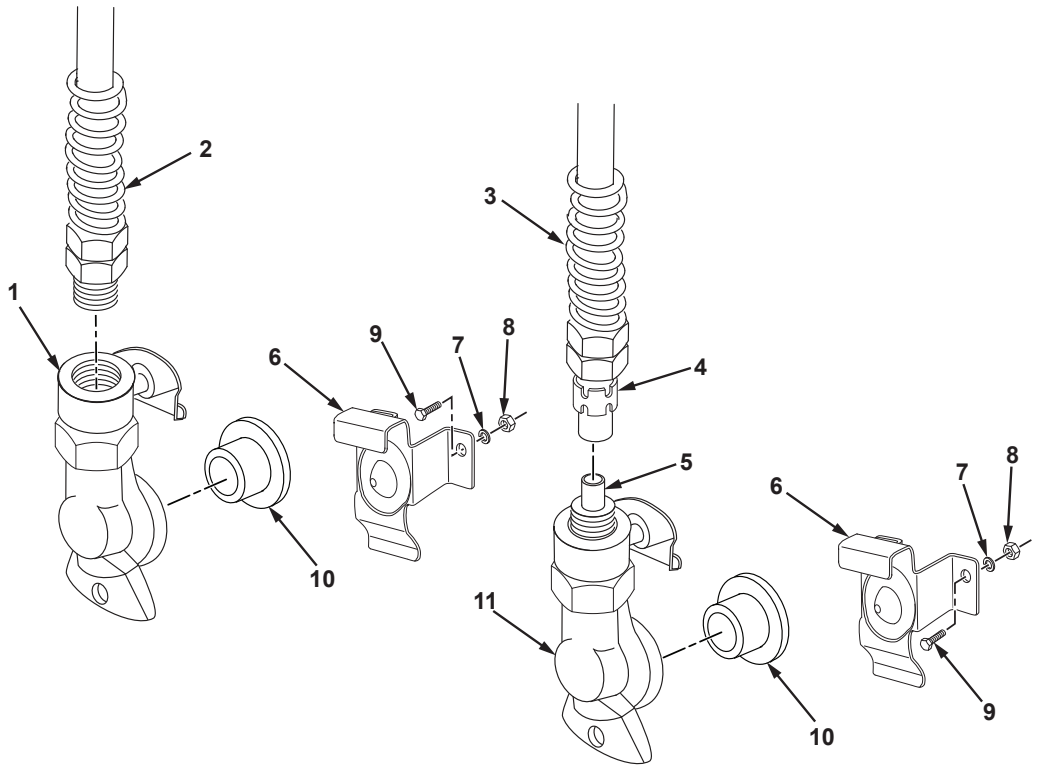


Figure 8. Air Coupling.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 1208 AIR BRAKE SYSTEM	
					FIG. 8. AIR COUPLING	
1	PAFZZ	4730-00-595-0083	58536	A52484-1	COUPLING HALF,QUICK.....	1
2	PCFZZ	4720-01-487-4702	06721	11961	HOSE ASSEMBLY,NONME.....	1
3	PCFZZ	4720-01-507-3444	06721	11960	HOSE ASSEMBLY,NONME.....	1
4	PAFZZ	4730-00-542-5598	81343	SAE J514 8-8 140138C	COUPLING,PIPE.....	2
5	PAFZZ	2590-01-180-6105	06721	11300	NIPPLE,FRAME.....	2
6	PAFZZ	2530-00-545-5406	06853	212227N	DUMMY COUPLING,AUTO.....	2
7	PAFZZ	5310-00-582-5965	80205	MS35338-44	WASHER,LOCK.....	4
8	PAFZZ	5310-00-761-6882	96906	MS51967-2	NUT,PLAIN,HEXAGON.....	4
9	PAFZZ	5305-00-225-3839	80205	MS90728-8	SCREW,CAP,HEXAGON H.....	4
10	PCFZZ	5330-00-090-2128	58536	A52484-2	PACKING,PREFORMED.....	2
11	PAFZZ	4730-01-096-3204	06721	N20415NB	COUPLING HALF,QUICK.....	1
					END OF FIGURE	

FIELD MAINTENANCE
RELAY VALVE, TRAILER VALVE, AIR TANK, LINES, AND FITTINGS

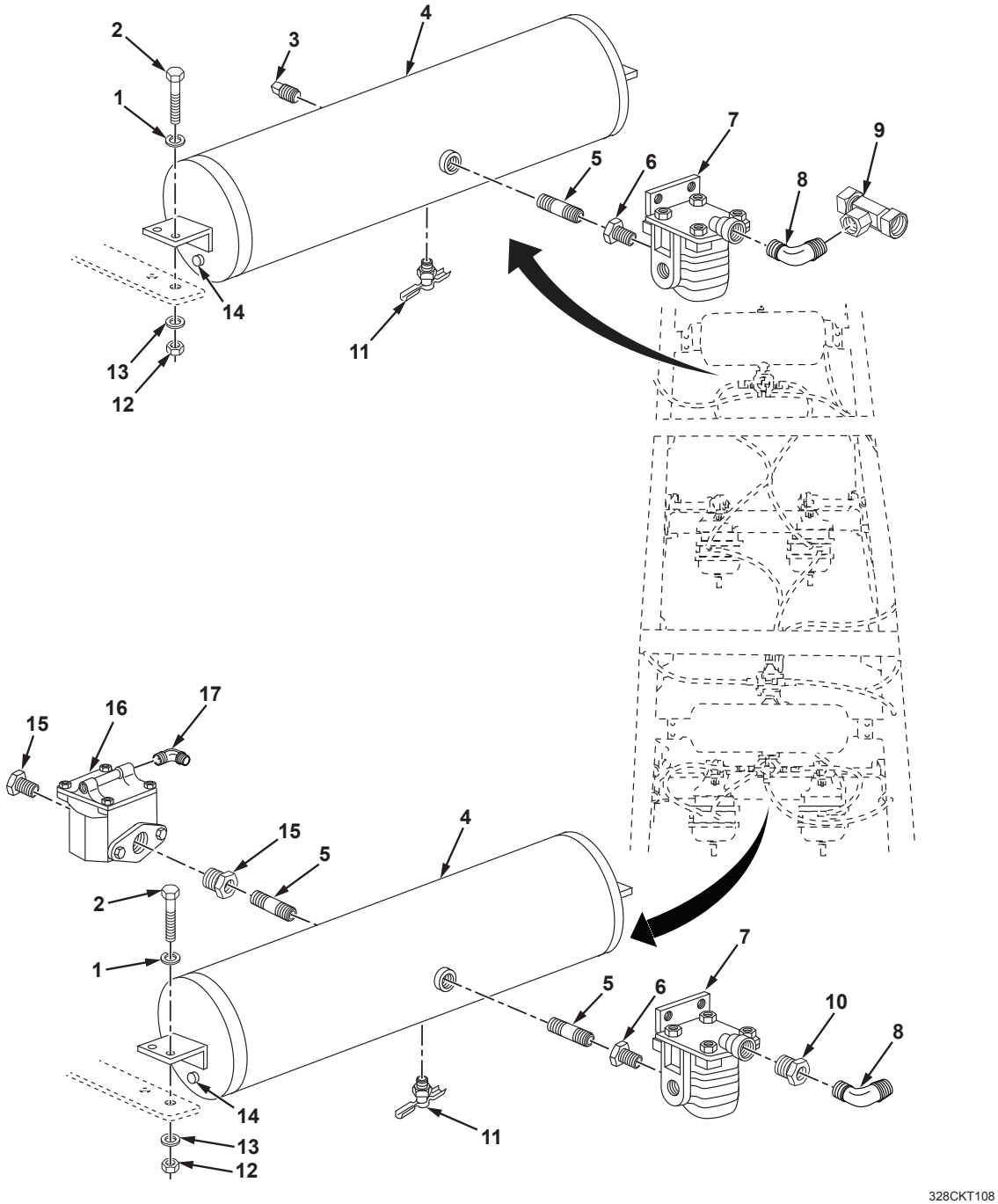


Figure 9. Relay Valve, Trailer Valve, Air Tank, Lines, and Fittings.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 1208 AIR BRAKE SYSTEM	
					FIG. 9. RELAY VALVE, TRAILER VALVE, AIR TANK, LINES, AND FITTINGS	
1	PAFZZ	5310-00-637-9541	59556	019-00004-42	WASHER,LOCK	8
2	PAFZZ	5305-01-325-8387	80205	MS90725-64	SCREW,CAP,HEXAGON H	8
3	PAFZZ	4730-01-269-2415	93061	211P-12	PLUG,PIPE	1
4	PAFZZ	2530-00-469-7847	06721	19840	TANK,PRESSURE	2
5	PAFZZ	4730-01-043-8150	81343	SAE J514 12-8 140137	REDUCER,PIPE	3
6	PAFZZ	4730-01-134-7759	81343	SAE J246 8-8 100102BA	ADAPTER,STRAIGHT,PI	2
7	PAFZZ	2530-01-487-4663	06721	N30108BH	VALVE,BRAKE PNEUMAT	2
8	PAFZZ	4730-00-289-0155	79146	012093	ELBOW,PIPE TO TUBE	2
9	PAFZZ	4730-00-469-7797	81343	6-6-6 130424B	TEE,PIPE	1
10	PAFZZ	4730-01-091-8032	81343	J246 8-6 100102BA	ADAPTER,STRAIGHT,PI	1
11	PAFZZ	4820-00-849-1220	58536	A-A-59440/1-005	COCK,DRAIN	2
12	PAFZZ	5310-00-087-4652	81349	M45913/1-6CG5C	NUT,SELF-LOCKING,HE	8
13	PAFZZ	5310-00-087-7493	96906	MS27183-13	WASHER,FLAT	8
14	PAFZZ	4730-01-487-4686	93061	211P-6	PLUG,PIPE	5
15	PAFZZ	4730-01-096-9128	93061	68NTA-6-6	ADAPTER,STRAIGHT,PI	2
16	PAFZZ	2530-01-487-4652	10125	110170	VALVE,BRAKE PNEUMAT	1
17	PAFZZ	4730-01-095-7717	81343	SAE J246 8-6 100202BA	ELBOW,PIPE TO TUBE	1
					END OF FIGURE	

FIELD MAINTENANCE
HUB AND DRUM ASSEMBLY

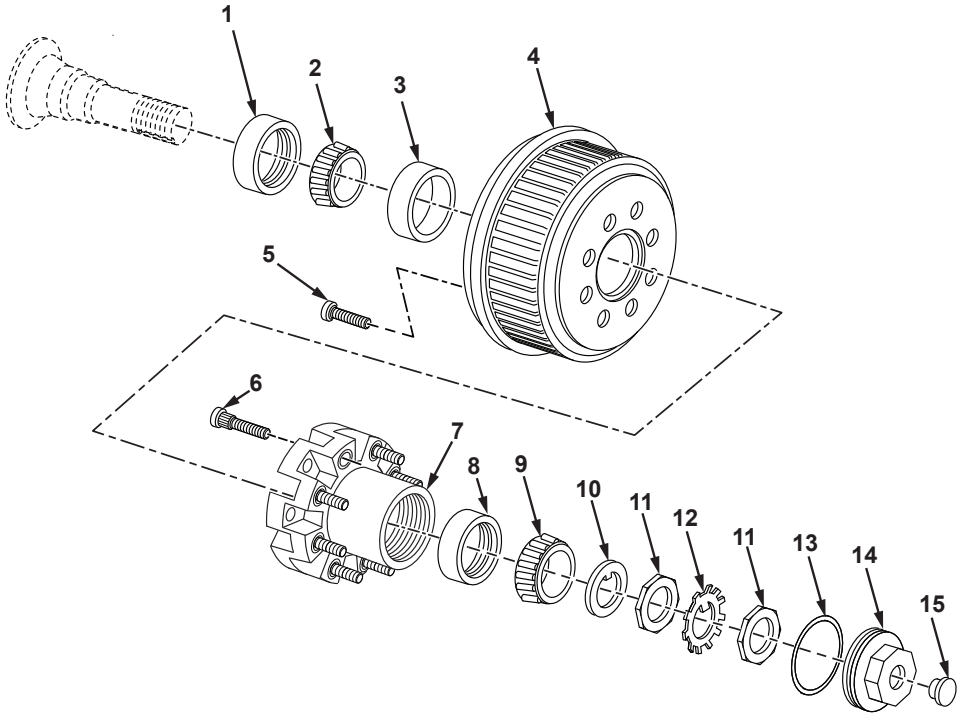


Figure 10. Hub and Drum Assembly.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 1311 WHEEL ASSEMBLY	
					FIG. 10. HUB AND DRUM ASSEMBLY	
1	PAFZZ	5330-01-417-7761	15460	010-056-00	SEAL,PLAIN	4
2	PAFZZ	3110-00-100-3095	0LTL1	3984	CONE AND ROLLERS,TA	4
3	PAFZZ	3110-00-100-0380	0LTL1	3920	CUP,TAPERED ROLLER	4
4	PFFZZ	2530-01-508-0873	15460	009-028-01	BRAKE DRUM	4
5	PAFZZ	5307-01-487-4636	15460	007-244-00	STUD,SELF-LOCKING	32
6	PAFZZ	5305-01-506-9478	15460	007-115-00	SCREW,MACHINE	32
7	PAFZZ	2530-01-507-3179	15460	008-214-08	HUB,WHEEL,VEHICULAR	4
8	PFFZZ	3120-01-507-1704	15460	031-021-01	BEARING,SLEEVE	4
9	PAFZZ	3110-00-100-3563	15460	031-021-02	CONE AND ROLLERS,TA	4
10	PAFZZ	5310-01-507-2395	15460	005-059-00	WASHER,KEY	4
11	PAFZZ	5310-01-507-2934	15460	006-084-00	NUT,PLAIN,HEXAGON	8
12	PAFZZ	5310-01-507-2383	15460	005-060-00	WASHER,LOCK	4
13	PCFZZ	5331-01-487-4635	15460	010-050-00	O-RING	4
14	PAFZZ	5340-01-487-4610	15460	021-036-00	CAP,PROTECTIVE,DUST	4
15	PAFZZ	5340-01-487-4614	15460	046-032-00	PLUG,PROTECTIVE,DUS	4
					END OF FIGURE	

FIELD MAINTENANCE
TIRES

1 2
2 THRU 6 3 AND 4

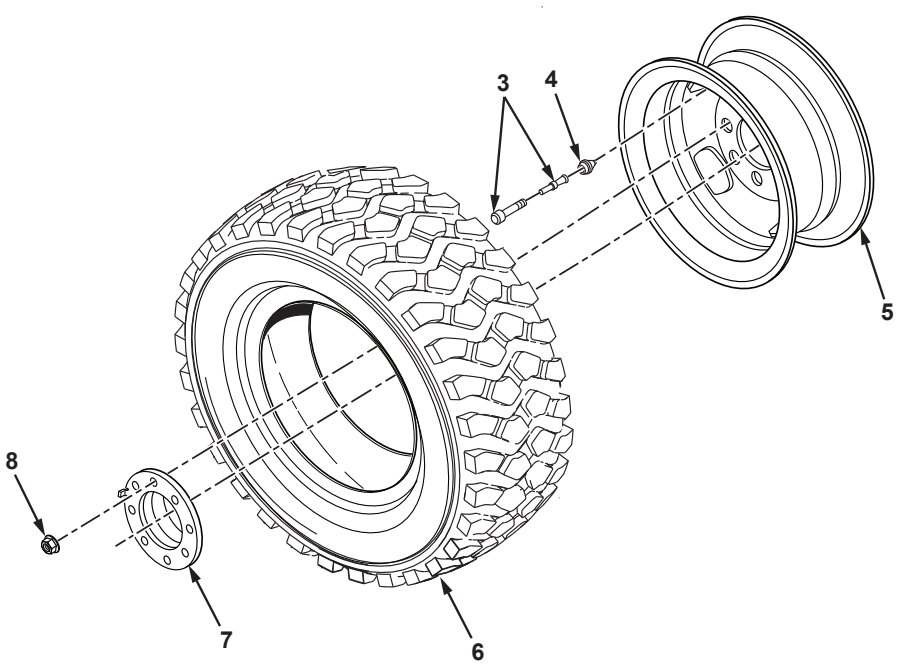


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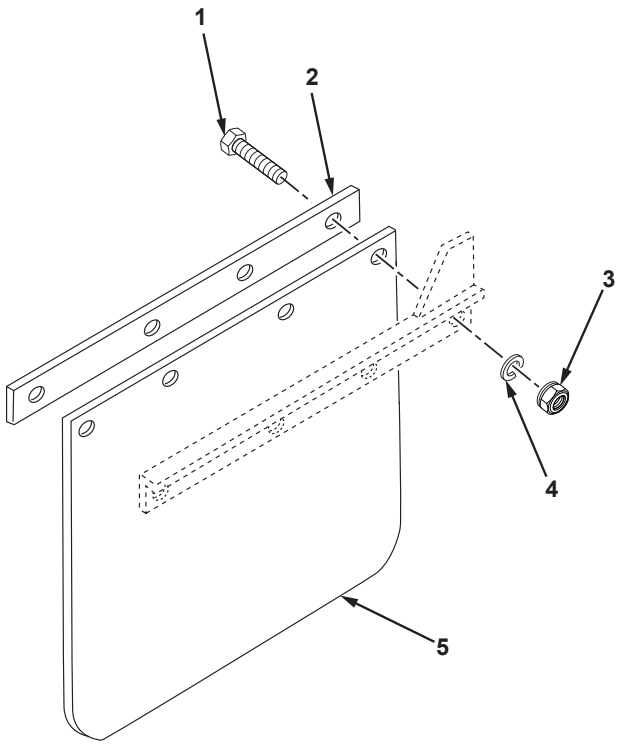
Figure 11. Tires.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 1311 WHEEL ASSEMBLY	
					FIG. 11. TIRES	
1	PCFFF	0000-00-000-0000	2W888	1103-3000-0A	TIRE AND WHEEL ASSY	9
2	PAFFF	2640-00-555-2842	58536	AA52611-2-1-TR416	. VALVE,PNEUMATIC TIR	1
3	PAFZZ	2640-01-169-9892	27783	6035	. . VALVE CORE	1
4	PAFZZ	2640-01-098-2029	27783	660	. . CAP,PNEUMATIC VALVE	1
5	PACZZ	2530-01-487-4711	15460	017-279-25	. WHEEL,PNEUMATIC TIR	1
6	PCFFF	2610-01-148-1635	19207	12504904	. TIRE, PNEUMATIC, VE	1
7	PCFZZ	2530-01-487-4612	15460	033-052-01	RING,SIDE,AUTOMOTIV	2
8	PAFZZ	5310-01-336-6856	15460	006-109-00	NUT,PLAIN,CONE SEAT	16
					END OF FIGURE	

FIELD MAINTENANCE
MUD FLAP



328CKT117

Figure 12. Mud Flap.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 1501 FRAME ASSEMBLY	
					FIG. 12. MUD FLAP	
1	PAFZZ	5305-01-325-8387	80205	MS90725-64	SCREW,CAP,HEXAGON H.....	8
2	PFFZZ	5340-01-487-5060	2W888	1103-1810-01	PLATE,MOUNTING.....	2
3	PAFZZ	5310-00-087-4652	81349	M45913/1-6CG5C	NUT,SELF-LOCKING,HE.....	8
4	PAFZZ	5310-00-087-7493	96906	MS27183-13	WASHER,FLAT.....	8
5	PAFZZ	2540-01-487-4707	07DK2	2050445	GUARD,SPLASH,VEHICU.....	2
					END OF FIGURE	

FIELD MAINTENANCE
BUMPER

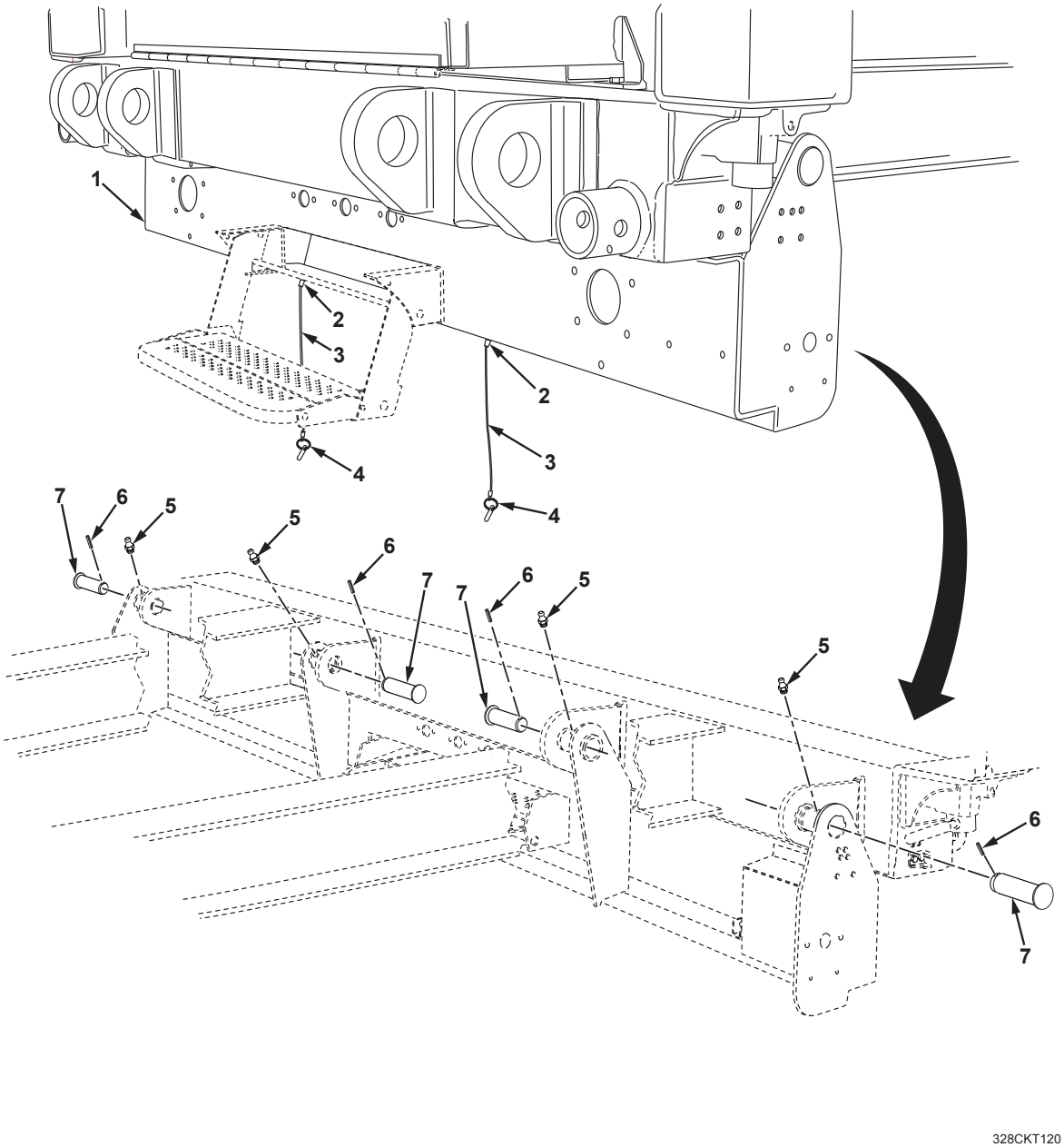


Figure 13. Bumper.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 1501 FRAME ASSEMBLY	
					FIG. 13. BUMPER	
1	XDFZZ		2W888	1103-1920-01	PLATE,REAR UOC: RAY	1
2	PAFZZ	4030-00-431-5537	30003	2842687	SWAGING SLEEVE,WIRE	2
3	PAFZZ	4010-01-487-5103	59157	M83420/4-002	ROPE,WIRE	2
4	PAFZZ	5315-01-270-8270	84256	BLNS4-13	PIN,LOCK	2
5	PAFZZ	4730-00-050-4203	81343	AS15001-1	FITTING,LUBRICATION UOC: RAY	4
6	PAFZZ	5315-01-305-7675	96906	MS171658	PIN,SPRING UOC: RAY	4
7	PBFZZ	0000-00-000-0000	2W888	1103-1918-01	PIN,HINGE UOC: RAY	4
					END OF FIGURE	

FIELD MAINTENANCE
LUNETTE AND SAFETY CHAINS

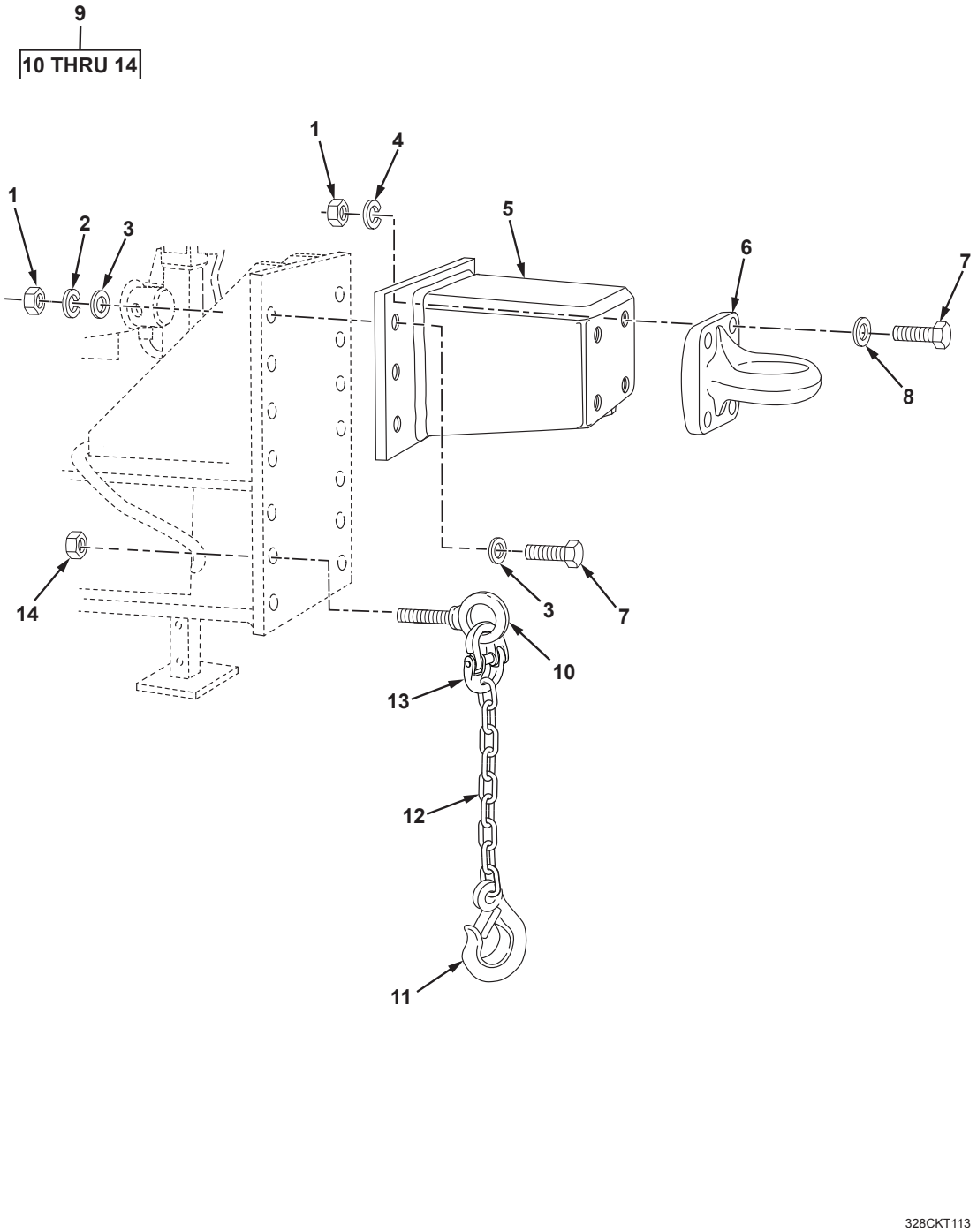


Figure 14. Lunette and Safety Chains.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 1503 PINTLES AND TOWING ATTACHMENTS	
					FIG. 14. LUNETTE AND SAFETY CHAINS	
1	PAFZZ	5310-00-763-8922	96906	MS51967-24	NUT,PLAIN,HEXAGON	10
2	PAFZZ	5310-00-584-7888	R1120	204392-212	WASHER,LOCK	6
3	PAFZZ	5310-01-251-2925	96906	MS51412-14	WASHER,FLAT	12
4	PAFZZ	5310-01-339-6531	80205	MS35338-51	WASHER,LOCK	4
5	XDFZZ		2W888	1103-1030-01	BRACKET,LUNETTE	1
6	PFFZZ	2540-01-164-7252	74410	DB-060FQ1	COUPLER,DRAWBAR,RIN	1
7	PAFZZ	5305-00-947-4356	80204	B1821BH075C350N	SCREW,CAP,HEXAGON H	10
8	PAFZZ	5310-00-809-8533	96906	MS27183-23	WASHER,FLAT	4
9	PAFZZ	4010-01-487-5087	2W888	1103-1740-01	CHAIN ASSEMBLY,SING	2
10	PAFZZ	5306-01-487-4722	76257	9900235	. BOLT,EYE	1
11	PAFZZ	4030-01-487-4710	93922	657719	. HOOK,HOIST	1
12	PAFZZ	4010-00-286-5645	81348	RR-C-271 TY1 CL5 ST2	. CHAIN,WELDED	1
13	PAFZZ	4010-01-041-9751	81348	RR-C-271,TY XIV,SZ. 3/8 IN	. LINK,DETACHABLE	1
14	PAFZZ	5310-00-067-6356	81349	M45913/2-12CG5C	. NUT,SELF-LOCKING,HE	1
					END OF FIGURE	

FIELD MAINTENANCE
SPARE TIRE CARRIER

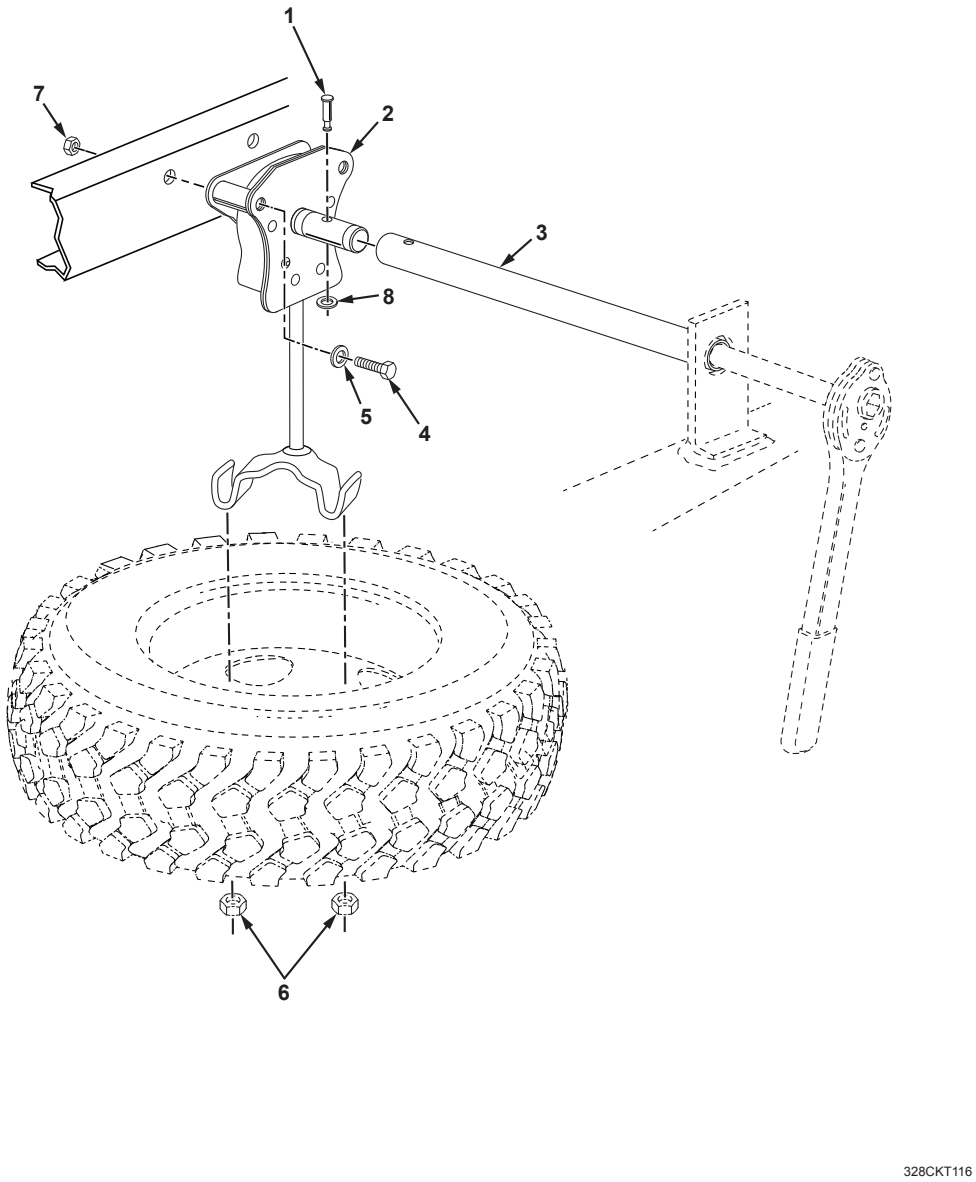


Figure 15. Spare Tire Carrier.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 1504 SPARE WHEEL CARRIER AND TIRE LOCK	
					FIG. 15. SPARE TIRE CARRIER	
1	PAFZZ	5315-01-487-4659	7X677	15567923	PIN,SHOULDER,HEADED.....	1
2	PAFZZ	2590-01-356-7706	7X677	15733295	RETAINER,SPARE TIRE.....	1
3	PAFZZ	5120-01-478-9697	24617	15548837	SOCKET,SOCKET WRENC.....	1
4	PAFZZ	5305-00-269-3219	80205	MS90725-69	SCREW,CAP,HEXAGON H.....	2
5	PAFZZ	5310-00-087-7493	96906	MS27183-13	WASHER,FLAT.....	2
6	PAFZZ	5310-01-336-6856	15460	006-109-00	NUT,PLAIN,CONE SEAT.....	2
7	PAFZZ	5310-00-087-4652	81349	M45913/1-6CG5C	NUT,SELF-LOCKING,HE.....	2
8	PAFZZ	5325-01-487-4662	24617	11561546	RING,RETAINING.....	1
					END OF FIGURE	

FIELD MAINTENANCE
LANDING LEG MODEL XCK2000

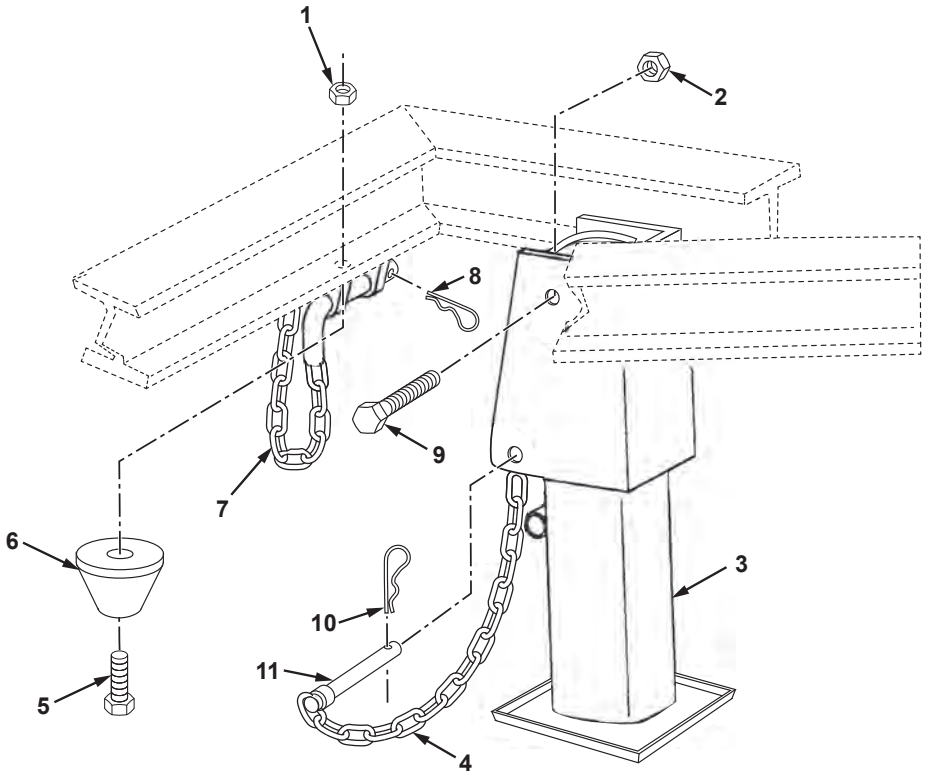


Figure 16. Landing Leg Model XCK2000.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 1507 LANDING GEAR, LEVELING JACKS (MECHANICAL OR HYDRAULIC)	
					FIG. 16. LANDING LEG MODEL XCK2000	
1	PAFZZ	5310-00-689-3877	80205	MS17829-3C	NUT,SELF-LOCKING,HE UOC: CRV	1
2	PAFZZ	5310-00-067-6356	81349	M45913/2-12CG5C	NUT,SELF-LOCKING,HE UOC: CRV	1
3	PFFZZ	2590-01-487-4588	2W888	1103-1660-01	LEG,SEMITRAILER RET UOC: CRV	1
4	XDFZZ		39426	3593T21-16	CHAIN,WELDED UOC: CRV	1
5	PAFZZ	5305-00-984-6214	80205	MS35206-267	SCREW,MACHINE UOC: CRV	1
6	PCFZZ	5340-01-487-4727	76385	ZB-1175	BUMPER UOC: CRV	1
7	PFFZZ	4010-01-487-5262	39428	3593T47	CHAIN,WELDED UOC: CRV	1
8	PAFZZ	5315-01-270-8270	84256	BLNS4-13	PIN,LOCK UOC: CRV	1
9	PFFZZ	5306-00-145-6997	88044	AN12-62	BOLT,MACHINE UOC: CRV	1
10	PAFZZ	5315-01-507-3953	39428	98335A087	PIN,LOCK UOC: CRV	1
11	PAFZZ	5315-01-487-5083	2W888	1103-1710-01	PIN,LOCK,DETENT UOC: CRV	1
					END OF FIGURE	

FIELD MAINTENANCE
LANDING LEG MODEL XCK2000E1

3
4 THRU 13

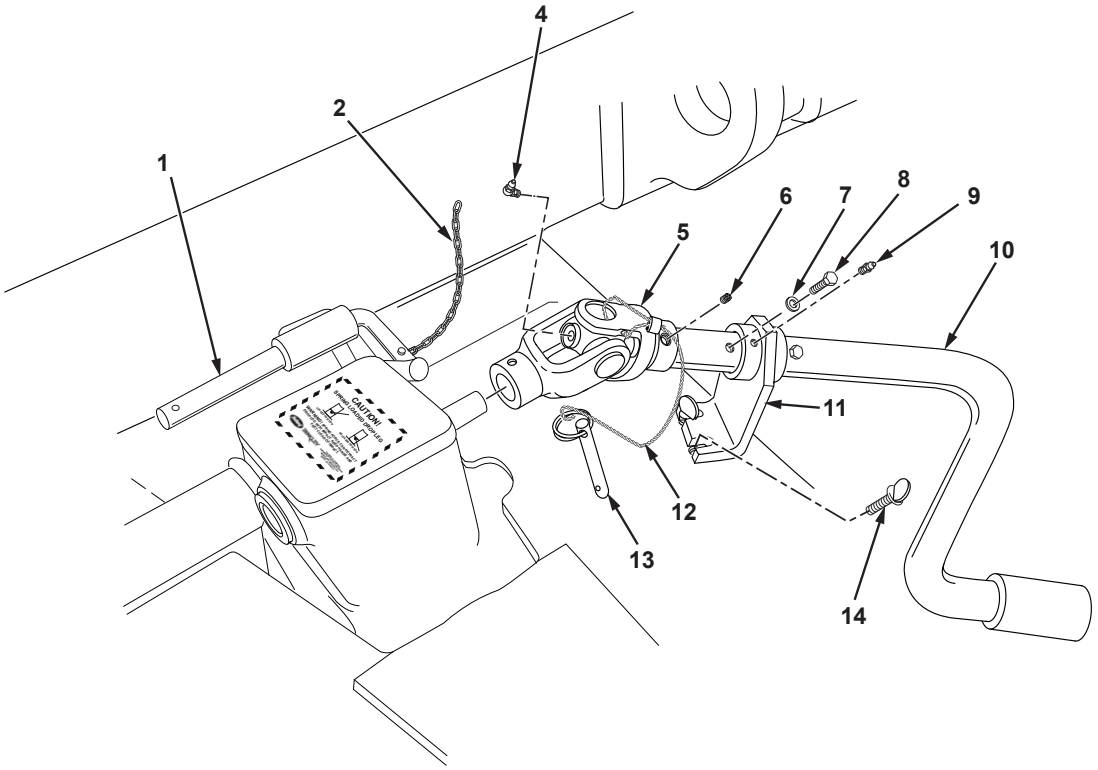


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Figure 17. Landing Leg Model XCK2000E1. (Sheet 1 of 2)

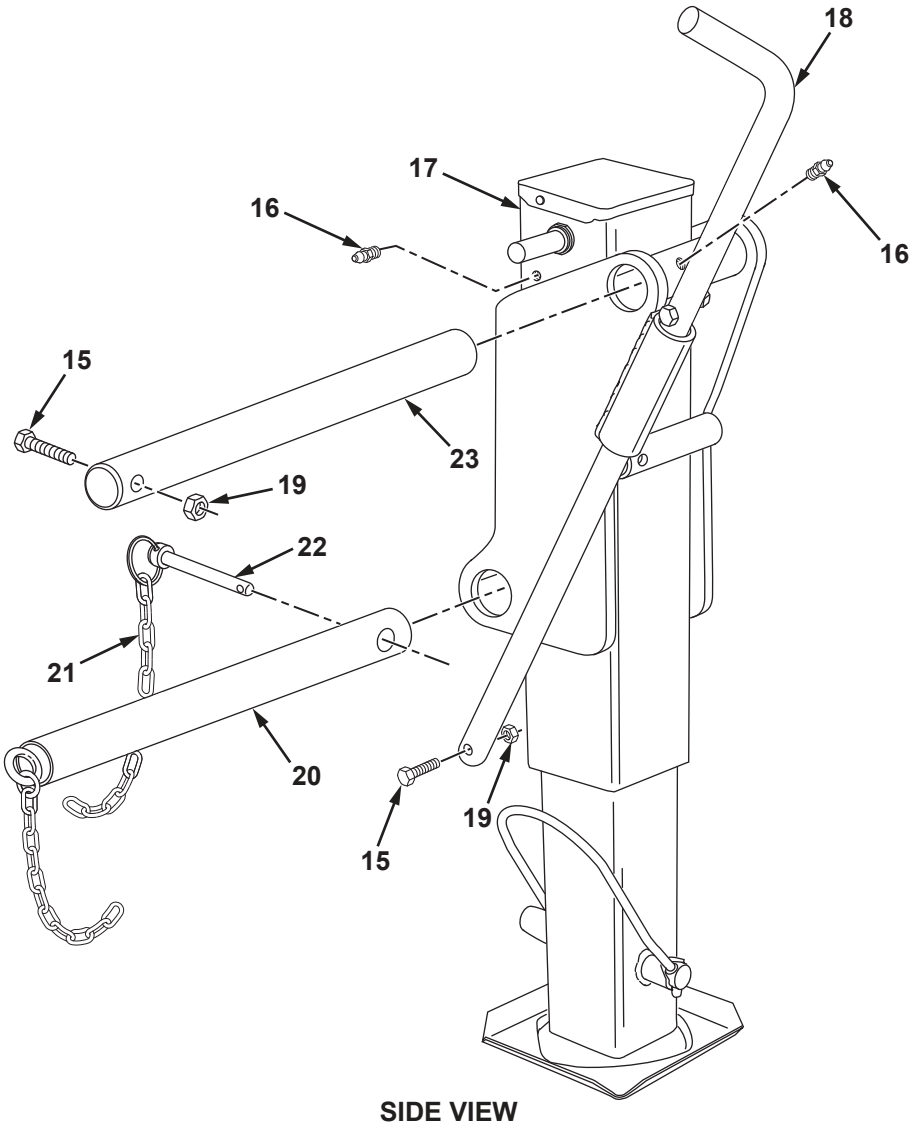


Figure 17. Landing Leg Model XCK2000E1. (Sheet 2 of 2)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 1507 LANDING GEAR, LEVELING JACKS (MECHANICAL OR HYDRAULIC)	
					FIG. 17. LANDING LEG MODEL XCK2000E1	
1	PAFZZ	5315-01-487-5083	2W888	1103-1710-01	PIN,LOCK,DETENT UOC: RAY	1
2	PAFZZ	4010-01-487-5262	39428	3593T47	CHAIN,WELDED UOC: RAY	1
3	PFFFF	0000-00-000-0000	2W888	1103-1945-01	HANDLE CRANK UOC: RAY	1
4	PAFZZ	4730-00-050-4207	81343	AS15001-4	. FITTING,LUBRICATION UOC: RAY	1
5	PFFZZ	0000-00-000-0000	2W888	1103-1944-01	. UNIVERSAL JOINT ASS UOC: RAY	1
6	PAFZZ	5305-00-724-5884	98042	8630-27-5	. SETSCREW UOC: RAY	1
7	PAFZZ	5310-00-582-5965	80205	MS35338-44	. WASHER,LOCK UOC: RAY	2
8	PAFZZ	5305-00-225-3839	80205	MS90725-8	. SCREW,CAP,HEXAGON H UOC: RAY	2
9	PAFZZ	4730-00-050-4203	81343	AS15001-1	. FITTING,LUBRICATION UOC: RAY	1
10	PFFZZ	0000-00-000-0000	2W888	1103-1942-01	. HANDLE CRANK UOC: RAY	1
11	PFFZZ	0000-00-000-0000	2W888	1103-1931-01	. HANDLE SUPPORT,LAND UOC: RAY	1
12	PAFZZ	4010-01-487-5103	59157	M83420/4-002	. ROPE,WIRE UOC: RAY	1
13	PFFZZ	0000-00-000-0000	84256	BLNS6-20	. PIN,DETENT UOC: RAY	1
14	PAFZZ	0000-00-000-0000	39428	91744A624	SCREW,THUMB UOC: RAY	2
15	PAFZZ	5305-00-068-0509	80204	B1821BH025C125N	SCREW,CAP,HEXAGON H UOC: RAY	2
16	PAFZZ	4730-00-050-4203	81343	AS15001-1	FITTING,LUBRICATION UOC: RAY	2
17	PFFZZ	2590-01-521-5678	2W888	1103-1926-01	SUPPORT,RETRACTABLE UOC: RAY	1
18	XDFZZ		2W888	1103-1937-01	PIN,RETAINING UOC: RAY	1
19	PAFZZ	5310-00-088-1251	81349	M45913/1-4CG5C	NUT,SELF-LOCKING,HE UOC: RAY	2
20	XDFZZ		2W888	1103-1670-01	LOCKING PIN UOC: RAY	1

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
21	XDFZZ		39426	3593T21-16	CHAIN,WELDED UOC: RAY	1
22	PAFZZ	5315-01-270-8270	84256	BLNS4-13	PIN,LOCK UOC: RAY	1
23	XDFZZ		2W888	1103-1934-01	ROD, STRAIGHT, HEAD UOC: RAY	1

END OF FIGURE

FIELD MAINTENANCE
SPRING ASSEMBLY

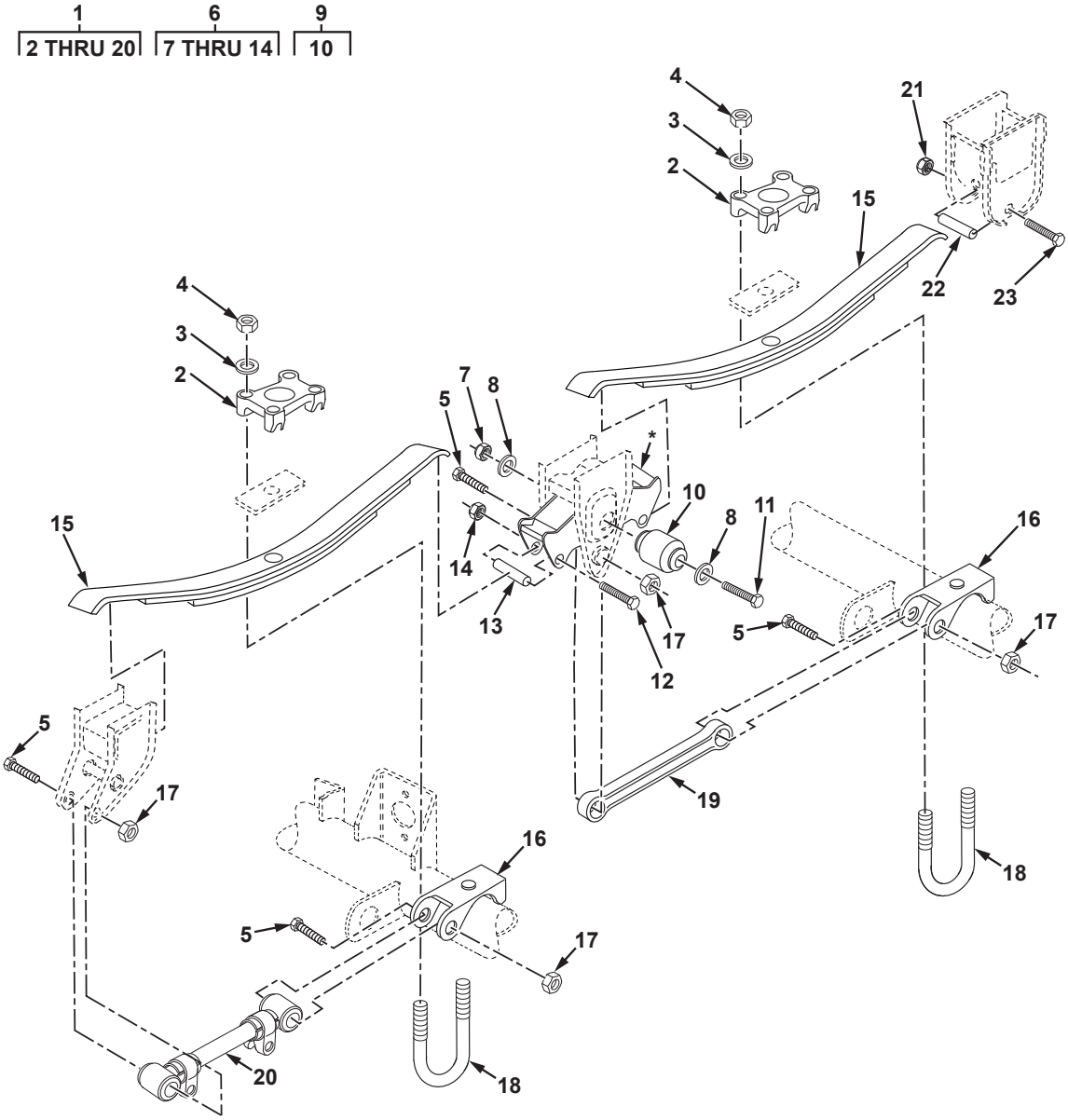
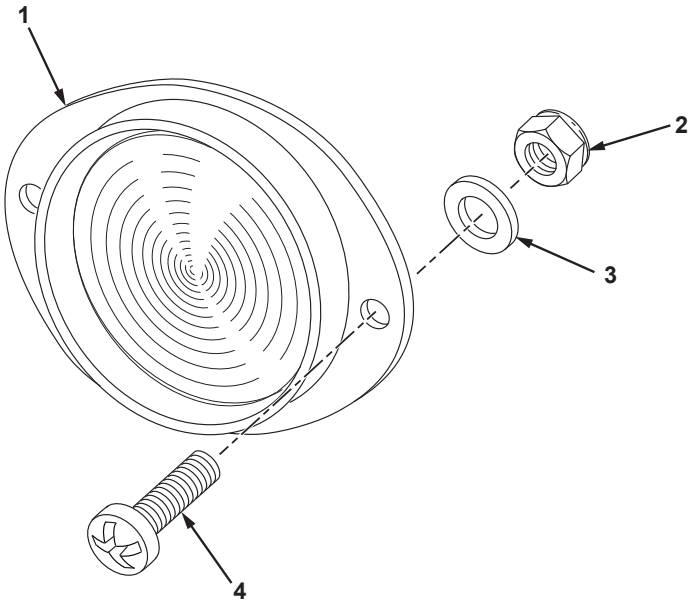


Figure 18. Spring Assembly.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 1601 SPRINGS	
					FIG. 18. SPRING ASSEMBLY	
1	XBFFF		92967	H9700T-UN/MT-3/4	SUSPENSION KIT	1
2	XDFZZ		92967	09202-00	. TOP PLATE	4
3	PAFZZ	5310-00-809-8540	96906	MS27183-25	. WASHER,FLAT	16
4	PAFZZ	5310-01-194-9211	92967	34-04	. NUT,PLAIN,HEXAGON	16
5	XDFZZ		92967	719-02	. BOLT,MACHINE	8
6	XDFFF		92967	16319-02	. HANGER ROCKER ASSY	2
7	PAFZZ	5310-01-487-4651	92967	11154-00	. . NUT,SELF-LOCKING,HE	1
8	PAFZZ	5310-01-098-7246	92967	837-00	. . WASHER,FLAT	2
9	XDFFF		92967	16158-01	. . ROCKER ASSY W/BSHNG	1
10	XDFZZ		92967	18723-01	. . . BUSHING, ROCKER	1
11	XDFZZ		92967	16150-01	. . SCREW, CAP, HEX	1
12	PAFZZ	5306-01-487-4650	92967	759-00	. . BOLT,MACHINE	2
13	PAFZZ	5365-01-420-5031	11083	4R9827	. . SPACER,SLEEVE	2
14	PAFZZ	5310-01-099-6539	92967	37-03	. . NUT,SELF-LOCKING,HE	2
15	XBFZZ		92967	00356-00	. SPRING, SUSPENSION	4
16	XDFZZ		92967	705-01	. SPRING SEAT	4
17	PAFZZ	0000-00-000-0000	92967	10562-00	. NUT,PLAIN,EXTENDED	8
18	PAFZZ	5306-01-487-4653	92967	07816-07	. BOLT,U	4
19	PFFZZ	2530-01-153-1859	92967	71500	. TORQUE ROD,TANDEM A	2
20	PFFZZ	0000-00-000-0000	92967	16398-04	. TORQUE ARM, ADJ	2
21	PAFZZ	5310-01-099-6539	92967	37-03	NUT,SELF-LOCKING,HE	4
22	PAFZZ	5365-01-420-5031	11083	4R9827	SPACER,SLEEVE	4
23	PAFZZ	5306-01-487-4650	92967	759-00	BOLT,MACHINE	4
					END OF FIGURE	

FIELD MAINTENANCE
REFLECTORS



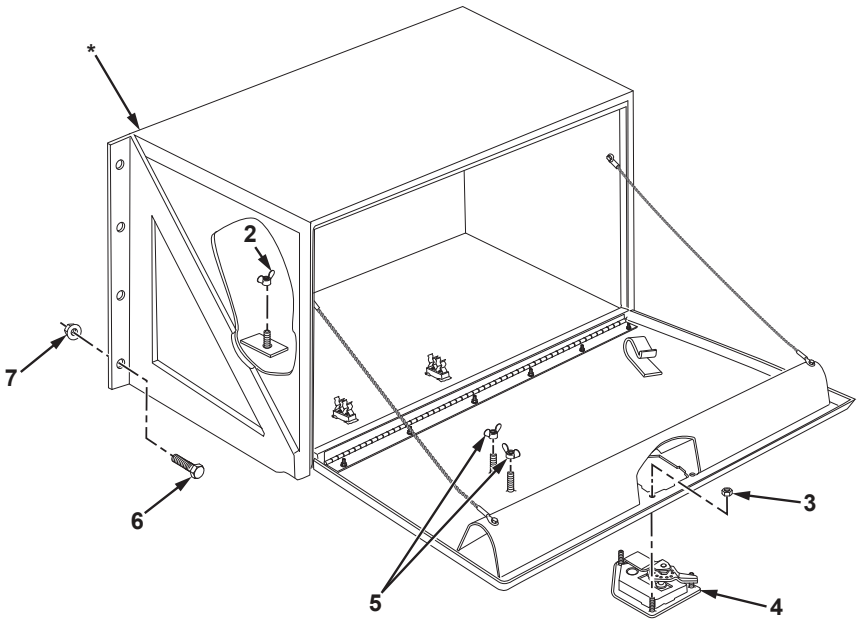
328CKT115

Figure 19. Reflectors.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 2202 ACCESSORY ITEMS	
					FIG. 19. REFLECTORS	
1	PAFZZ	9905-00-205-2795	79343	00328-0003	REFLECTOR,INDICATIN RED	4
1	PAFZZ	9905-00-202-3639	81834	0100A	REFLECTOR,INDICATIN AMBER	2
2	PAFZZ	5310-00-088-1251	81349	M45913/1-4CG5C	NUT,SELF-LOCKING,HE	12
3	PAFZZ	5310-00-809-4058	96906	MS27183-10	WASHER,FLAT	12
4	PAFZZ	5305-00-068-0502	80205	MS90725-6	SCREW,CAP,HEXAGON H	12
					END OF FIGURE	

FIELD MAINTENANCE
TOOL BOX

1
2 THRU 5



*** Part of Item 1**

328CKT121

Figure 20. Tool Box.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 2202 ACCESSORY ITEMS	
					FIG. 20. TOOL BOX	
1	XDFFF		2W888	1103-1295-01	BOX,ACCESSORIES STO UOC: CRV	1
1	XDFFF		2W888	1103-3295-01	BOX, TOOL UOC: RAY	1
2	PAFZZ	5310-01-124-5247	96906	MS35425-78	. NUT,PLAIN,WING	2
3	PAFZZ	5310-00-088-1251	81349	M45913/1-4CG5C	. NUT,SELF-LOCKING,HE	4
4	PAFZZ	0000-00-000-0000	1F078	L8816	. LATCH	1
5	PAFZZ	5310-01-088-2490	96906	MS35425-74	. NUT,PLAIN,WING	2
6	PAFZZ	5305-01-325-8387	80205	MS90725-64	SCREW,CAP,HEXAGON H	8
7	PAFZZ	5310-00-087-4652	81349	M45913/1-6CG5C	NUT,SELF-LOCKING,HE	8
					END OF FIGURE	

FIELD MAINTENANCE
ELECTRICAL COVER, INTERVEHICULAR CABLE CLAMP

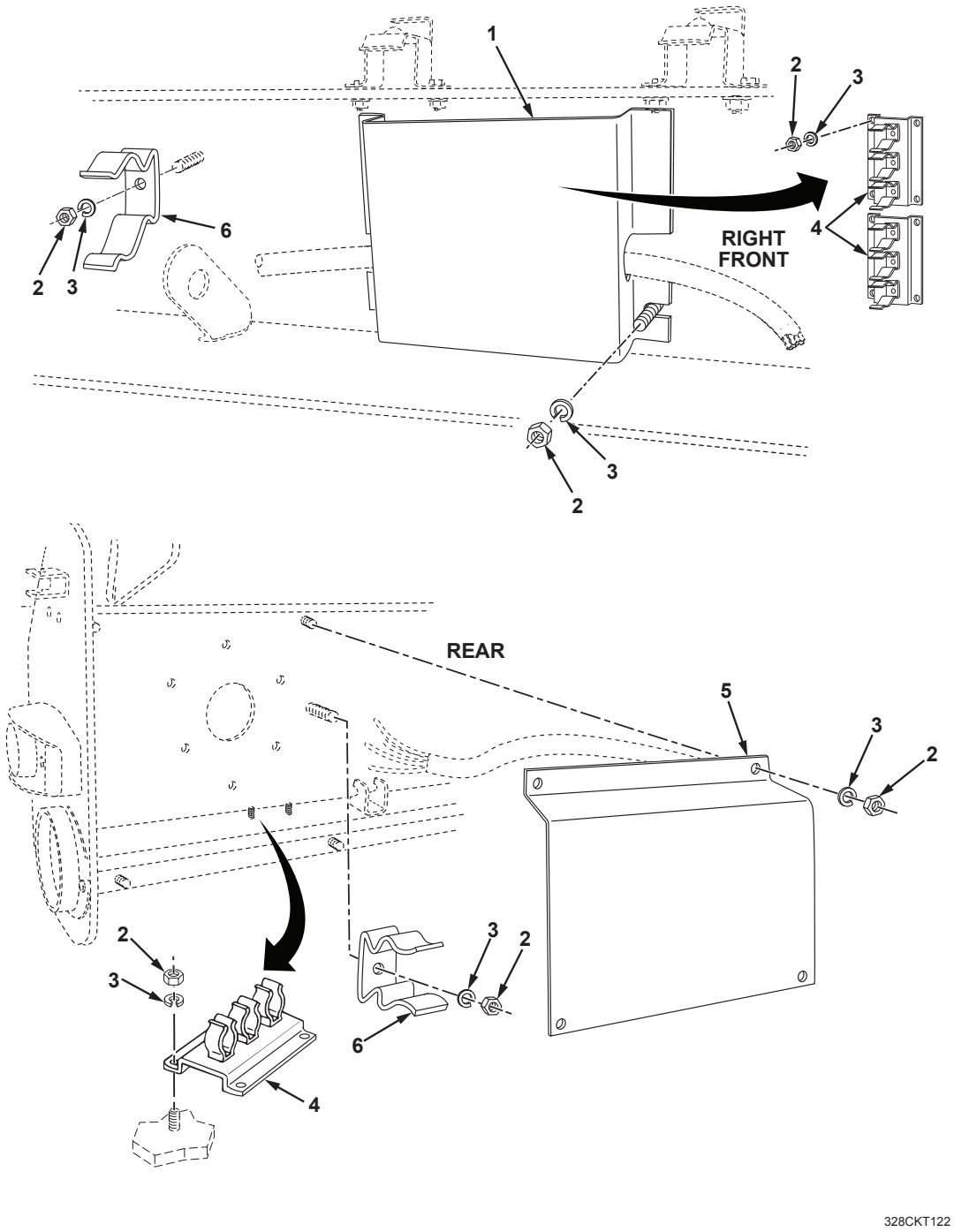
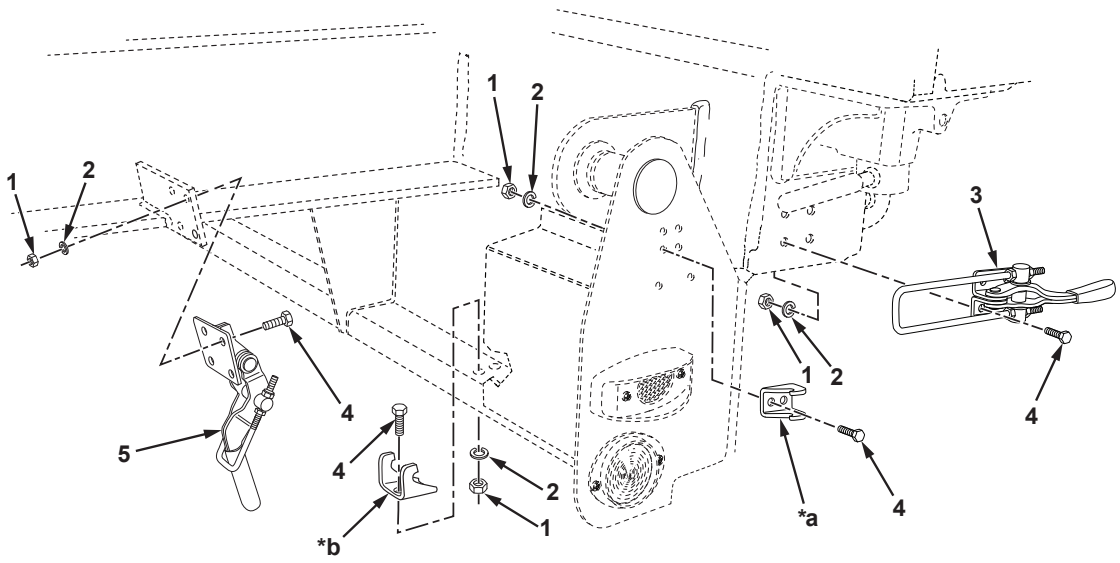


Figure 21. Electrical Cover, Intervehicular Cable Clamp.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 2202 ACCESSORY ITEMS	
					FIG. 21. ELECTRICAL COVER, INTERVEHICULAR CABLE CLAMP	
1	PAFZZ	5340-01-507-5082	2W888	1103-1820-01	COVER,ACCESS	1
2	PAFZZ	5310-00-761-6882	96906	MS51967-2	NUT,PLAIN,HEXAGON QUANTITY 3 FOR MODEL XCK2000	26
3	PAFZZ	5310-00-582-5965	80205	MS35338-44	WASHER,LOCK QUANTITY 3 FOR MODEL XCK2000	26
4	PAFZZ	5340-00-611-7883	19207	8747908	STRAP,RETAINING	4
5	XDFZZ		2W888	1103-1946-01	COVER,ACCESS UOC: RAY	2
6	PAFZZ	5340-00-679-3185	19207	8363978	CLIP,SPRING TENSION	3
					END OF FIGURE	

FIELD MAINTENANCE
REAR BUMPER CLAMP MODEL XCK2000E1



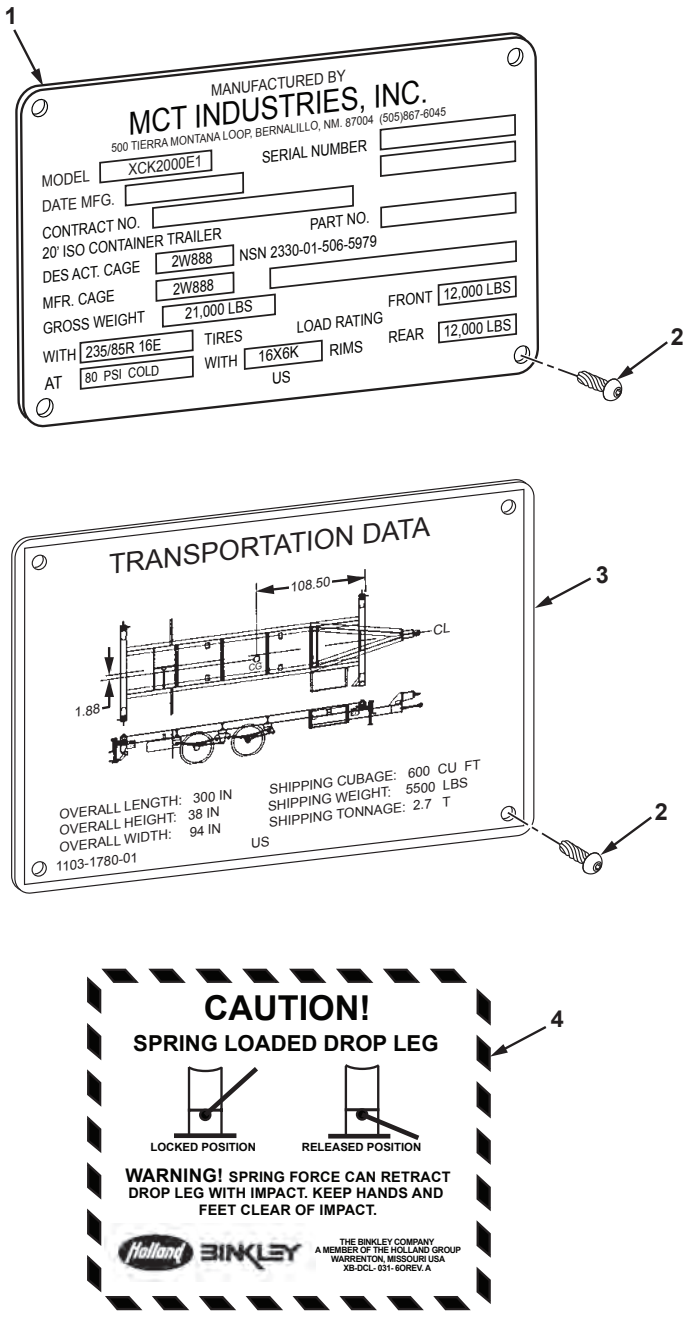
***a Part of Item 3**
***b Part of Item 5**

328CKT123

Figure 22. Rear Bumper Clamp Model XCK2000E1.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 2202 ACCESSORY ITEMS	
					FIG. 22. REAR BUMPER CLAMP MODEL XCK2000E1	
1	PAFZZ	5310-00-880-7744	49181	36103	NUT,PLAIN,HEXAGON UOC: RAY	24
2	PAFZZ	5310-00-407-9566	80205	MS35338-45	WASHER,LOCK UOC: RAY	24
3	PAFZZ	0000-00-000-0000	99862	CL-300-PA-8ASSY	CLAMP,TOGGLE,HAND UOC: RAY	2
4	PAFZZ	5306-00-225-8499	80205	MS90725-34	BOLT,MACHINE UOC: RAY	24
5	PAFZZ	3444-01-535-3793	81337	17-2-0707-1	CLAMP,TOGGLE,HAND UOC: RAY	2
					END OF FIGURE	

FIELD MAINTENANCE
IDENTIFICATION/TRANSPORTATION PLATES



328CKT124

Figure 23. Identification/Transportation Plates.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 2210 DATA PLATES AND INSTRUCTION HOLDERS	
					FIG. 23. IDENTIFICATION/ TRANSPORTATION PLATES	
1	XDFZZ		2W888	1103-1550-01	PLATE,IDENTIFICATIO UOC: CRV	1
1	XDFZZ		2W888	1103-3550-01	PLATE,IDENTIFICATIO UOC: RAY	1
2	PAFZZ	5305-00-253-5618	80205	MS21318-27	SCREW,DRIVE	8
3	XDFZZ		2W888	1103-3780-01	DATA PLATE, TRANSPO UOC: RAY	1
3	XDFZZ		2W888	1103-1780-01	PLATE,IDENTIFICATIO UOC: CRV	1
4	PAFZZ	0000-00-000-0000	99411	XB-DCL-031-60	DECAL UOC: RAY	1
					END OF FIGURE	

FIELD MAINTENANCE
REPAIR PARTS KITS

ILLUSTRATION NOT REQUIRED

Figure KITS. Repair Parts Kits

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)			(7) QTY
					GROUP 9401 REPAIR KITS			
					FIG. KITS. REPAIR PARTS KITS			
1	PAFZZ	3040-01-602-5336	15460	K71-101-00	PARTS KIT,CAMSHAFT.....			2
					FITTING,LUBRICATION	(008)	6-2	
					BUSHING,TAPERED	(004)	6-3	
					RETAINER,CAMSHAFT	(004)	6-5	
					WASHER,FLAT	(004)	6-6	
					RING,RETAINING	(004)	6-11	
					WASHER,FLAT	(004)	6-12	
					SEAL,PLAIN	(008)	6-13	
					BUSHING,SLEEVE	(004)	6-14	
					WASHER,FLAT	(004)	6-15	
2	PBFZZ	2530-01-550-8474	15460	K71-460-00	PARTS KIT,SHOE BRAK.....			2
					PIN,STRAIGHT,HEADED	(008)	6-17	
					BUSHING,SLEEVE	(008)	6-19	
					RING,RETAINING	(008)	6-20	
					SPRING,HELICAL	(004)	6-21	
					PIN,SHOULDER,HDLESS	(004)	6-22	
					PIN,STRAIGHT,HDLESS	(008)	6-23	
					SPRING,HELICAL	(004)	6-24	
					SPACER,SLEEVE	(008)	6-25	
					END OF FIGURE			

FIELD MAINTENANCE
NATIONAL STOCK NUMBER (NSN) INDEX

STOCK NUMBER	FIG.	ITEM
0000-00-000-0000	6	27
	11	1
	13	7
	17	3
	17	5
	17	10
	17	11
	17	13
	17	14
	18	17
	18	20
	20	4
	22	3
	23	4
6240-00-019-0877	2	4
6240-00-019-3093	1	10
5310-00-045-3296	2	5
4730-00-050-4203	13	5
	17	9
	17	16
4730-00-050-4207	17	4
5935-00-059-2841	3	5
5310-00-067-6356	14	14
	16	2
5305-00-068-0502	19	4
5305-00-068-0509	17	15
5310-00-087-4652	9	12
	12	3
	15	7
	20	7
5310-00-087-7493	9	13
	12	4
	15	5
5310-00-088-1251	17	19
	19	2
	20	3
5330-00-090-2128	8	10
3110-00-100-0380	10	3
3110-00-100-3095	10	2
3110-00-100-3563	10	9
5306-00-145-6997	16	9
5935-00-167-7775	4	4
6220-00-179-4324	1	2
9905-00-202-3639	19	1
9905-00-205-2795	19	1
5305-00-225-3839	8	9
	17	8
5306-00-225-8499	22	4
5305-00-253-5618	23	2
5305-00-269-3211	1	5
5305-00-269-3219	15	4
4010-00-286-5645	14	12
4730-00-289-0155	9	8
6220-00-299-7425	2	3
6220-00-299-7426	2	3
5310-00-407-9566	22	2
4030-00-431-5537	13	2
5331-00-462-0907	1	3
5935-00-462-6603	4	2
4730-00-469-7797	9	9
2530-00-469-7847	9	4
4730-00-542-5598	8	4
2530-00-545-5406	8	6
2640-00-555-2842	11	2
6220-00-577-3434	2	2
5310-00-582-5965	3	2
	4	6
	7	2
	8	7
	17	7
	21	3
5310-00-584-7888	14	2
4730-00-595-0083	8	1
5340-00-611-7883	4	7
	21	4
5310-00-637-9541	1	4
	9	1
5340-00-679-3185	21	6
5310-00-689-3877	1	13
	16	1
5305-00-724-5884	17	6
6220-00-726-1916	2	2
5310-00-761-6882	3	3
	4	5
	7	3
	8	8
	21	2
5310-00-763-8922	14	1
5310-00-809-4058	19	3
5310-00-809-8533	14	8
5310-00-809-8540	18	3
4820-00-849-1220	9	11
5310-00-880-7744	22	1
5305-00-947-4356	14	7
5305-00-984-6214	1	12

STOCK NUMBER	FIG.	ITEM
	2	1
	2	7
	16	5
4010-01-041-9751	14	13
4730-01-043-8150	9	5
6220-01-067-4717	1	6
5310-01-088-2490	20	5
4730-01-091-8032	9	10
6220-01-093-4439	1	1
4730-01-095-5833	7	6
4730-01-095-7717	9	17
4730-01-096-3204	8	11
4730-01-096-9128	9	15
2640-01-098-2029	11	4
5310-01-098-7246	18	8
5310-01-099-6539	18	14
	18	21
5310-01-124-5247	20	2
4730-01-134-7759	9	6
2610-01-148-1635	11	6
2530-01-153-1859	18	19
2540-01-164-7252	14	6
2640-01-169-9892	11	3
2590-01-180-6105	8	5
4720-01-182-9067	7	4
4720-01-182-9068	7	5
5310-01-194-9211	18	4
4720-01-225-0661	7	9
5310-01-251-2925	14	3
4730-01-269-2415	9	3
5315-01-270-8270	13	4
	16	8
	17	22
6220-01-284-2709	1	8
6220-01-297-3217	1	7
5315-01-305-7675	13	6
4730-01-323-1025	7	10
5305-01-325-8387	9	2
	12	1
	20	6
5310-01-336-6856	11	8
	15	6
5310-01-339-6531	14	4
2590-01-356-7706	15	2
5330-01-417-7761	10	1
5365-01-420-5031	18	13
	18	22
6240-01-447-3779	1	9
5120-01-478-9697	15	3
6220-01-482-5574	2	6
6220-01-482-6113	2	6
6220-01-482-9850	1	11
2590-01-487-4588	16	3
5340-01-487-4610	10	14
2530-01-487-4612	11	7
5340-01-487-4614	10	15
2530-01-487-4619	6	18
2530-01-487-4625	6	18
2530-01-487-4628	6	18
2530-01-487-4633	6	4
5331-01-487-4635	10	13
5307-01-487-4636	10	5
5310-01-487-4647	6	9
5310-01-487-4649	6	10
5306-01-487-4650	18	12
	18	23
5310-01-487-4651	18	7
2530-01-487-4652	9	16
5306-01-487-4653	18	18
5340-01-487-4657	3	1
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5315-01-487-4659	15	1
5325-01-487-4662	15	8
2530-01-487-4663	9	7
4730-01-487-4686	9	14
4720-01-487-4702	8	2
4720-01-487-4704	7	7
4720-01-487-4705	7	8
2540-01-487-4707	12	5
4030-01-487-4710	14	11
2530-01-487-4711	11	5
5306-01-487-4722	14	10
5340-01-487-4727	16	6
6150-01-487-4966	4	1
6150-01-487-4967	3	4
5340-01-487-5060	12	2
5306-01-487-5078	6	7
5315-01-487-5083	16	11
	17	1
4010-01-487-5087	14	9
4010-01-487-5103	13	3
	17	12
4010-01-487-5262	16	7
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5305-01-506-9478	10	6
3120-01-507-1704	10	8
5310-01-507-2383	10	12
5310-01-507-2395	10	10
5310-01-507-2934	10	11
2530-01-507-3179	10	7
4720-01-507-3444	8	3
5315-01-507-3953	16	10
5340-01-507-5082	21	1
2530-01-508-0873	10	4
2590-01-521-5678	17	17
3040-01-528-2535	6	8

STOCK NUMBER	FIG.	ITEM
3444-01-535-3793	22	5
2530-01-550-8474	KITS	2
3040-01-602-5336	KITS	1

END OF WORK PACKAGE

FIELD MAINTENANCE
PART NUMBER (P/N) INDEX

PART NUMBER	FIG.	ITEM
A-A-59440/1-005	9	11
A52484-1	8	1
A52484-2	8	10
AA524463-B10	1	9
AA52463-A08	2	4
AA52463-A09	1	10
AA52611-2-1-TR416	11	2
AN12-62	16	9
AS15001-1	13	5
	17	9
	17	16
AS15001-4	17	4
B1821BH025C125N	17	15
B1821BH075C350N	14	7
BLNS4-13	13	4
	16	8
	17	22
BLNS6-20	17	13
CL-300-PA-8ASSY	22	3
D12000	5	1
DB-060FQ1	14	6
H9700T-UN/MT-3/4	18	1
J246 8-6 100102BA	9	10
K71-101-00	KITS	1
K71-460-00	KITS	2
L8816	20	4
M45913/1-4CG5C	17	19
	19	2
	20	3
M45913/1-6CG5C	9	12
	12	3
	15	7
	20	7
M45913/2-12CG5C	14	14
	16	2
M83420/4-002	13	3
	17	12
MS171658	13	6
MS17829-3C	1	13
	16	1
MS21318-27	23	2
MS27142-2	4	2
MS27144-1	4	4
MS27183-10	19	3
MS27183-13	9	13
	12	4
	15	5
MS27183-23	14	8
MS27183-25	18	3
MS35206-267	1	12
	2	1
	2	7
	16	5
MS35338-43	2	5
MS35338-44	3	2
	4	6
	7	2
	8	7
	17	7
	21	3
MS35338-45	22	2
MS35338-51	14	4
MS35421-1	2	3
MS35421-2	2	3
MS35423-1	2	2
MS35423-2	2	2
MS35425-74	20	5
MS35425-78	20	2
MS51412-14	14	3
MS51967-2	3	3
	4	5
	7	3
	8	8
	21	2
MS51967-24	14	1
MS52125-2	1	1
MS75020-1	3	5
MS90725-34	22	4
MS90725-6	19	4
MS90725-60	1	5
MS90725-64	9	2
	12	1
	20	6
MS90725-69	15	4
MS90725-8	17	8
MS90728-8	8	9
N20415NB	8	11
N30108BH	9	7
NT10008BK	7	5
PFT-6B-BLK-100	7	4
RR-C-271 TY1 CL5 ST2	14	12
RR-C-271,TY XIV,SZ 3/8 IN	14	13
SAE J246 6-6-6 120425BA	7	6
SAE J246 8-6 100202BA	9	17
SAE J246 8-8 100102BA	9	6

PART NUMBER	FIG.	ITEM
SAE J514 12-8 140137	9	5
SAE J514 8-8 140138C	8	4
XB-DCL-031-60	23	4
ZB-1175	16	6
00328-0003	19	1
00356-00	18	15
005-059-00	10	10
005-060-00	10	12
005-074-00	6	15
005-075-00	6	12
005-079-00	6	9
005-134-00	6	6
006-084-00	10	11
006-099-00	6	10
006-109-00	11	8
	15	6
007-115-00	10	6
007-139-00	6	7
007-244-00	10	5
008-214-08	10	7
009-028-01	10	4
010-050-00	10	13
010-052-00	6	13
010-056-00	10	1
0100A	19	1
012093	9	8
014-056-00	6	14
014-057-00	6	25
014-058-00	6	3
014-068-00	6	19
017-279-25	11	5
019-00004-42	1	4
	9	1
021-036-00	10	14
031-021-01	10	8
031-021-02	10	9
033-052-01	11	7
034-032-00	6	8
034-048-00	6	26
034-060-07	6	27
034-188-00	6	16
034-189-00	6	16
036-113-02	6	1
040-322-01	6	18
040-322-02	6	18
040-322-03	6	18
046-032-00	10	15
046-092-00	6	21
046-097-00	6	24
055-040-07	6	4
056-010-00	6	17
056-017-00	6	22
056-018-00	6	23

PART NUMBER	FIG.	ITEM
061-006-00	6	2
069-018-00	6	20
069-020-00	6	11
069-078-00	6	5
07240	1	11
07406	2	6
07407	2	6
07816-07	18	18
09202-00	18	2
1-3414	3	1
	4	8
1-3814	7	1
100469D	7	10
10562-00	18	17
110170	9	16
1103-1030-01	14	5
1103-1295-01	20	1
1103-1430-01	4	1
1103-1440-01	3	4
1103-1550-01	23	1
1103-1660-01	16	3
1103-1670-01	17	20
1103-1710-01	16	11
	17	1
1103-1740-01	14	9
1103-1780-01	23	3
1103-1810-01	12	2
1103-1820-01	21	1
1103-1918-01	13	7
1103-1920-01	13	1
1103-1926-01	17	17
1103-1931-01	17	11
1103-1934-01	17	23
1103-1937-01	17	18
1103-1942-01	17	10
1103-1944-01	17	5
1103-1945-01	17	3
1103-1946-01	21	5
1103-3000-0A	11	1
1103-3295-01	20	1
1103-3550-01	23	1
1103-3780-01	23	3
11154-00	18	7
11300	8	5
11561546	15	8
11639519-2	1	3
11639520	1	6
11639535	1	2
11960	8	3
11961	8	2
12360850-1	1	8
12360870-2	1	7
12405T51	3	6

PART NUMBER	FIG.	ITEM
	4	3
12504904	11	6
15548837	15	3
15567923	15	1
15733295	15	2
16150-01	18	11
16158-01	18	9
16319-02	18	6
16398-04	18	20
16628	7	9
16646	7	8
16660	7	7
17-2-0707-1	22	5
18723-01	18	10
19840	9	4
204392-212	14	2
2050445	12	5
211P-12	9	3
211P-6	9	14
212227N	8	6
2842687	13	2
34-04	18	4
3593T21-16	16	4
	17	21
3593T47	16	7
	17	2
36103	22	1
37-03	18	14
	18	21
3920	10	3
3984	10	2
4R9827	18	13
	18	22
6-6-6 130424B	9	9
6035	11	3
657719	14	11
660	11	4
68NTA-6-6	9	15
705-01	18	16
71500	18	19
719-02	18	5
759-00	18	12
	18	23
8363978	21	6
837-00	18	8
8630-27-5	17	6
8747908	4	7
	21	4
91744A624	17	14
98335A087	16	10
9900235	14	10

END OF WORK PACKAGE

CHAPTER 10

SUPPORTING INFORMATION

WORK PACKAGE INDEX

Title	WP Sequence No.
REFERENCES	WP 0103
MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION	WP 0104
MAINTENANCE ALLOCATION CHART (MAC)	WP 0105
COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS	WP 0106
ADDITIONAL AUTHORIZATION LIST (AAL)	WP 0107
EXPENDABLE AND DURABLE ITEMS LIST (EDIL)	WP 0108
TOOL IDENTIFICATION LIST (TIL)	WP 0109

FIELD MAINTENANCE
REFERENCES

SCOPE

This work package lists forms, field manuals, technical manuals, and other publications that are referenced in this manual and that apply to the operation and field maintenance of the XCK2000 and XCK2000E1 trailers.

DA PAM 25-30, Consolidated Index of Army Publications and Blank Forms, should be consulted frequently for changes or revisions and for new publications relating to material covered in this technical manual.

ARMY REGULATION

AR 700-138	Army Logistics Readiness and Sustainability
AR 750-1	Army Materiel Maintenance Policy

ARMY SUPPLY BULLETIN

SB 740-98-1	Storage Serviceability Standard: Tracked Vehicles, Wheeled Vehicles, and Component Parts

COMMON TABLES OF ALLOWANCE

CTA 8-100	Army Medical Department Expendable/Durable Items
CTA 50-909	Field and Garrison Furnishings and Equipment
CTA 50-970	Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items)

FIELD MANUALS

FM 4-25.11	First Aid
FM 90-3	Desert Operations

FORMS

DA Form 2028	Recommended Changes to Publications and Blank Forms
DA Form 2404	Equipment Inspection and Maintenance Worksheet
DA Form 2407	Maintenance Request
DA Form 5988-E	Equipment Inspection and Maintenance Worksheet (Electronic)
DD Form 314	Preventive Maintenance Schedule and Record

FORMS - Continued

DD Form 1397	Processing and Deprocessing Record for Shipment, Storage and Issue of Vehicles and Spare Engines
SF 364	Report of Discrepancy (ROD)
SF 368	Product Quality Deficiency Report (PQDR)

MILITARY SPECIFICATIONS

MIL-PRF-680	Degreasing Solvent
MIL-PRF-10924	Grease, Automotive and Artillery
MIL-PRF-21260	Lubricating Oil, Internal Combustion Engine, Preservative Break-in

PAMPHLETS

DA PAM 750-8	The Army Maintenance Management System (TAMMS) Users Manual

TECHNICAL BULLETINS

TB 9-2510-242-40	Towed Wheeled Vehicles, FSC Class 2330, Lunette Trailers and Semitrailers: Repair of Frames
TB 43-0213	Corrosion Prevention and Control (CPAC) for Army Wheeled Vehicles
TB 43-0239	Maintenance in the Desert

TECHNICAL CIRCULARS

TC 9-237	Operator's Manual for Welding Theory and Application
TC 21-305-20	Manual for the Wheeled Vehicle Operator

TECHNICAL MANUALS

TM 4-33.31	Operations and Maintenance of Ordnance Materiel in Cold Weather
TM 9-214	Inspection, Care and Maintenance of Antifriction Bearings
TM 9-2610-200-14	Operator's, Unit, Direct Support and General Support Maintenance Manual for Care, Maintenance Repair and Inspection of Pneumatic Tires and Inner Tubes

TECHNICAL MANUALS - Continued

TM 9-4910-783-13&P	Operator's, Unit, and Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) for Standard Automotive Tool Set (SATS) NSN 4910-01-490-6453 Field Maintenance Modules (FMM) FMM1 (NSN 4910-01-501-7342) & FMM2 (NSN 4910-01-501-7343)
TM 10-7360-226-13&P	Containerized Kitchen (With Trailer) NSN 7360-01-473-3408
TM 38-400	Joint Service Manual (JSM) for Storage and Materials Handling
TM 43-0139	Painting Instructions for Army Materiel
TM 55-2200-001-12	Transportability Guidance for Application of Blocking, Bracing and Tiedown Materials for Rail Transport
TM 750-244-3	Procedures for Destruction of Equipment to Prevent Enemy Use (Mobility Equipment Command)

OTHER PUBLICATIONS

ASME Y14.38-2007	American Society Mechanical Engineering Standard, Abbreviations and Acronyms for Use on Drawings and Related Documents

END OF WORK PACKAGE

FIELD MAINTENANCE
MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION

INTRODUCTION

The Army Maintenance System MAC

This introduction provides a general explanation of all maintenance and repair functions authorized at the two maintenance levels under the Two-Level Maintenance System concept.

This MAC (immediately following the introduction) designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component shall be consistent with the capacities and capabilities of the designated maintenance levels, which are shown on the MAC in column (4) as:

Field – includes two subcolumns, Crew (C) and Maintainer (F).
Sustainment – includes two subcolumns, Below Depot (H) and Depot (D).

The maintenance to be performed at field and sustainment levels is described as follows:

1. Crew Maintenance. The responsibility of a using organization to perform maintenance on its assigned equipment. It normally consists of inspecting, servicing, lubricating, adjusting, and replacing parts, minor assemblies, and subassemblies. The replace function for this level of maintenance is indicated by the letter "C" in the third position of the Source, Maintenance, and Recoverability (SMR) code. A "C" appearing in the fourth position of the SMR code indicates complete repair is possible at the crew maintenance level.
2. Maintainer Maintenance. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "F" appearing in the third position of the SMR code. An "F" appearing in the fourth position of the SMR code indicates complete repair is possible at the field maintenance level. Items are returned to the user after maintenance is performed at this level.
3. Below depot sustainment. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "H" appearing in the third position of the SMR code. An "H" appearing in the fourth position of the SMR code indicates complete repair is possible at the below depot sustainment maintenance level. Items are returned to the supply system after maintenance is performed at this level.
4. Depot sustainment. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "D" or "K" appearing in the third position of the SMR code. Depot sustainment maintenance can be performed by either depot personnel or contractor personnel. A "D" or "K" appearing in the fourth position of the SMR code indicates complete repair is possible at the depot sustainment maintenance level. Items are returned to the supply systems after maintenance is performed at this level.

The Tools and Test Equipment Requirements table (immediately following the MAC) lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from the MAC.

The Remarks table (immediately following the tools and test equipment requirements) contains supplemental instructions and explanatory notes for a particular maintenance function.

INTRODUCTION - Continued

Maintenance Functions

Maintenance functions are limited to and defined as follows:

1. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel). This includes scheduled inspection and gaugings and evaluation of cannon tubes.
2. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards on a scheduled basis, i.e. load testing of lift devices and hydrostatic testing of pressure hoses.
3. Service. Operations required periodically to keep an item in proper operating condition; e.g., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases. This includes scheduled exercising and purging of recoil mechanisms. The following are examples of service functions:
    a. Unpack. To remove from packing box for service or when required for the performance of maintenance operations.
    b. Repack. To return item to packing box after service and other maintenance operations.
    c. Clean. To rid the item of contamination.
    d. Touch up. To spot paint scratched or blistered surfaces.
    e. Mark. To restore obliterated identification.
4. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.
5. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.
6. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments of test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
7. Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. "Install" may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.
8. Paint (Ammunition Only). To prepare and spray color coats of paint so that the ammunition can be identified and protected. The color indicating primary use is applied, preferably, to the entire exterior surface as the background color of the item. Other markings are to be repainted as original so as to retain proper ammunition identification.

INTRODUCTION - Continued

9. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and assigned maintenance level is shown as the third position code of the Source, Maintenance, and Recoverability (SMR) code.
10. Repair. The application of maintenance services, including fault location/troubleshooting, removal/installation, disassembly/assembly procedures and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

NOTE

The following definitions are applicable to the "repair" maintenance function:

- **Services.** Inspect, test, service, adjust, align, calibrate, and/or replace.
- **Fault location/troubleshooting.** The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or Unit Under Test (UUT).
- **Disassembly/assembly.** The step-by-step breakdown (taking apart) of a spare/functional-group-coded item to the level of its least component that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).
- **Actions.** Welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

11. Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like-new condition.
12. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like-new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.

INTRODUCTION - Continued

Explanation of Columns in the MAC

Column (1) GROUP NUMBER. Column (1) lists Functional Group Code (FGC) numbers, the purpose of which is to identify maintenance-significant components, assemblies, subassemblies, and modules with the Next Higher Assembly (NHA).

Column (2) COMPONENT/ASSEMBLY. Column (2) contains the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

Column (3) MAINTENANCE FUNCTION. Column (3) lists the functions to be performed on the item listed in column (2). (For a detailed explanation of these functions, refer to "Maintenance Functions" outlined above.)

Column (4) MAINTENANCE LEVEL. Column (4) specifies each level of maintenance authorized to perform each function listed in column (3), by indicating work time required (expressed as manhours in whole hours or decimals) in the appropriate subcolumn. This work time figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance levels, appropriate work time figures are to be shown for each level. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the MAC. The symbol designations for the various maintenance levels are as follows:

Field:

C Crew Maintenance
F Maintainer Maintenance

Sustainment:

L Specialized Repair Activity (SRA)
H Below depot maintenance
D Depot maintenance

NOTE

The "L" maintenance level is not included in column (4) of the MAC. Functions to this level of maintenance are identified by work time figure in the "H" column of column (4), and an associated reference code is used in column (6). This code is keyed to the remarks, and the SRA complete repair application is explained there.

Column (5) TOOLS AND EQUIPMENT REFERENCE CODE. Column (5) specifies, by code, those common tool sets (not individual tools), common Test, Measurement, and Diagnostic Equipment (TMDE), and special tools, special TMDE, and special support equipment required to perform the designated function. Codes are keyed to the entries in the Tools and Test Equipment Requirements table.

Column (6) REMARKS CODE. When applicable, this column contains a letter code, in alphabetical order, which is keyed to the Remarks table entries.

INTRODUCTION - Continued

Explanation of Columns in the Tools and Test Equipment Requirements

Column (1) TOOL OR TEST EQUIPMENT REFERENCE CODE. The tool or test equipment reference code correlates with a code used in column (5) of the MAC.

Column (2) MAINTENANCE LEVEL. The lowest level of maintenance authorized to use the tool or test equipment.

Column (3) NOMENCLATURE. Name or identification of the tool or test equipment.

Column (4) NATIONAL STOCK NUMBER (NSN). The NSN of the tool or test equipment.

Column (5) TOOL NUMBER. The manufacturer's part number.

Explanation of Columns in the Remarks

Column (1) REMARKS CODE. The code recorded in column (6) of the MAC.

Column (2) REMARKS. This column lists information pertinent to the maintenance function being performed as indicated in the MAC.

END OF WORK PACKAGE

FIELD MAINTENANCE
MAINTENANCE ALLOCATION CHART (MAC)

Table 1. MAC for XCK2000 and XCK2000E1 Trailers.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
0000-00	PMCS (Before)	Inspect	0.6					
		Service	0.4					
0000-01	PMCS (During)	Inspect	0.1					
0000-02	PMCS (After)	Inspect	0.2					
		Service	0.2					
0000-03	PMCS (First-Month)	Service		0.5			1, 2, 3, 5	B
0000-04	PMCS (Semi-annual)	Inspect		4.6				
		Service		7.5			1, 2, 3, 4, 5	B
0000-05	PMCS (Annual)	Inspect		0.1				
		Service		8.0			1, 2, 3, 4, 5	B
0600	Electrical System	Test		3.5			1, 6	
0609-00	Lights, Rear Composite Assembly	Replace		0.5			1	
		Repair		0.5			1	
0609-01	Light-Emitting Diode (LED) Lights, Rear (XCK2000E1 Only)	Replace		0.5			1	
0609-02	Lights, Clearance (Assembly)	Replace		0.5			1	

Table 1. MAC for XCK2000 and XCK2000E1 Trailers - Continued.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
0613-00	Intervehicular Cable	Test		0.5			6	
		Replace		0.5			1, 6	
0613-01	Chassis Wiring Harness	Test		1.0			6	
		Replace		2.0			1	
		Repair		2.0			1, 6, 9	
1100	Axle							
1100-00	Axle	Replace		8.0			1, 2, 3, 4	A, B
1200	Service Brakes							
1202-00	Brake Assembly	Replace		3.0			1, 2, 3	B
1202-01	Brake Shoes	Replace		1.0			1, 2, 3	B
1202-02	Brake Adjustment	Adjust		0.2			1, 2, 3	B
1202-03	Camshaft and Bearings	Replace		1.5			1, 2, 3	B
1202-04	Slack Adjusters	Replace		0.5			1, 2, 3	B
1208-00	Brake, Spring Chamber	Replace		0.8			1, 5	
1208-01	Lines, Fittings, and Hoses (Air)	Replace		1.0			1	E
1208-02	Gladhands	Replace		0.5			1	
1208-03	Relay Valve, Trailer Valve	Replace		0.5			1	
1208-04	Valves, Drain	Replace		0.5			1	

Table 1. MAC for XCK2000 and XCK2000E1 Trailers - Continued.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
1208-05	Reservoir/ Tank, Air	Replace		1.0			1	
1300	Hubs and Drums							
1311-00	Drum, Brake	Replace		1.5			1, 2, 3, 4, 7	B
1311-01	Hub, Wheel, Vehicular	Replace		1.5			1, 2, 3, 4, 7	B
1311-02	Hubs Bearing	Replace		1.5			1, 2, 3, 4, 7	B
1311-03	O-Ring (Hub Gasket)	Replace		0.3			1, 2, 3, 4, 7	B
1311-04	Seal, Plain	Replace		2.0			1, 2, 3, 4, 7	B
1311-05	Wheel and Tire Assembly	Replace	0.5					
		Repair						C
1311-06	Spare Tire and Wheel Assembly	Replace	0.5					
		Repair						C
1500	Frame, Frame Attachments							
1500-00	Frame	Repair		TBD				D
1501-03	Mudflaps	Replace		0.5			1	B
1501-02	Bumper	Replace		0.5			1	
1503-00	Lunette	Replace		1.5			1, 8	B
1503-01	Safety Chains	Replace		0.5			1, 8	B

Table 1. MAC for XCK2000 and XCK2000E1 Trailers - Continued.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
1504-00	Spare Wheel Carrier and Tire Lock	Replace		0.5			1, 8	B
1507-00	Landing Leg (XCK2000E1 Only)	Replace		0.5			1	
1600	Springs and Suspension							
1601-00	Spring	Replace		4.0			1, 2, 3, 4	B
1601-01	Torque Rods	Replace		2.0			1, 2, 3, 4	B
		Adjust		0.5			1, 2, 3	B
2200	Accessory Items							
2202-01	Reflector, Indication	Replace		0.5			1	
2202-02	Tool Box	Replace		0.5			1	
		Repair		0.5			1, 2, 3	B
2202-03	Cover, Electrical and Cable Clamp	Replace		0.1			1	
2202-04	Rear Bumper Clamps (XCK2000E1 Only)	Replace		0.5			1	
2210-00	Data Plates	Replace		0.5			1, 2, 3	B

Table 2. Tools and Test Equipment Requirements for XCK2000 and XCK2000E1 Trailers.

TOOLS OR TEST EQUIPMENT	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	F	Tool Kit, General Mechanic's	5180-01-587-7823	KIT GMTK-5
2	F	Forward Repair System (FRS)	4940-01-533-1621	SC 4940-95-E42
3	F	Tool Set, Standard Automotive (SATS), Base	4910-01-490-6453	SC 4910-95-A81
4	F	Torque Wrench 3/4 in. Drive, 0 to 600 lb-ft (0 to 813 N•m)	5120-00-221-7983	KTC S0988
5	F	Torque Wrench 3/8 in. Drive, 0 to 300 lb-ft (0 to 407 N•m)		KTC S0987
6	F	Multimeter	6625-01-336-3372	77-4BN
7	F	Torque Wrench 1 in. Drive, 200 to 1,000 lb-ft (271 to 1,356 N•m)	5120-01-474-5099	QD5R1000
8	F	Torque Wrench 3/8 in. Drive, 0 to 75 lb-ft (0 to 102 N•m)		KTCS0989
9	F	Electrical Kit	5180-00-876-9336	5180-00-876-9336

Table 3. Remarks for XCK2000 and XCK2000E1 Trailers.

REMARK CODE	REMARKS
A	Refer to TM 10-7360-226-13&P for removal of the containerized kitchen to replace the ISO lock and lower weight for axle replacement.
B	Tools needed for this task will come from either SATS or FRS tool kit based on the unit's MTOE.
C	Refer to TM 9-2610-200-14 for tire repair.
D	Refer to TB 9-2510-242-40 for frame repair.
E	Time is dependent on how many items are being replaced.

END OF WORK PACKAGE

FIELD MAINTENANCE
COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS

INTRODUCTION

Scope

This Work Package (WP) lists Components of End Item (COEI) and Basic Issue Items (BII) for the XCK2000 and XCK2000E1 to help you inventory items for safe and efficient operation of the equipment.

General

The COEI and BII information is divided into the following lists:

COEI. This list is for information purposes only and is not authority to requisition replacements. These items are part of the XCK2000 and XCK2000E1 trailers. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you find and identify items.

BII. These essential items are required to place the XCK2000 and XCK2000E1 trailers in operation, operate it, and do emergency repairs. Although shipped separately packaged, BII must be with the XCK2000 and XK2000E1 trailers during operation and when it is transferred between property accounts. Listing these items is your authority to request/requisition them for replacement based on authorization of the end item by the Table of Organization and Equipment (TOE) and Modified Table of Organization and Equipment (MTOE). Illustrations are furnished to help you find and identify the items.

Explanation of Columns in the COEI and BII Lists

Column (1) ILLUS NUMBER. Indicates the reference number of the item listed.

Column (2) NATIONAL STOCK NUMBER (NSN). Identifies the NSN of the item to be used for requisition purposes.

Column (3) DESCRIPTION, PART NUMBER/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI and BII is also included in this column. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (4) USABLE ON CODE. When applicable, identifies a code if the item needed is not the same for different models of equipment. These codes are identified below:

Code	Used on
CRV	XCK2000
RAY	XCK2000E1

Column (5) U/I. Unit of Issue indicates the physical measurement or count of the item as issued per the NSN shown in column (2).

Column (6) QTY RQR. Indicates the quantity required.

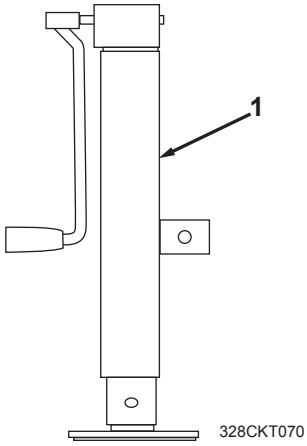

Table 1. Components of End Item (COEI) List for XCK2000 and XCK2000E1 Trailers.

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER (NSN)	(3) DESCRIPTION, PART NUMBER/ (CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
1	2590-01-487-4723	SUPPORT, RETRACTABLE, TRAILER (stowed in toolbox) 190791 (5TIC4)		EA	4

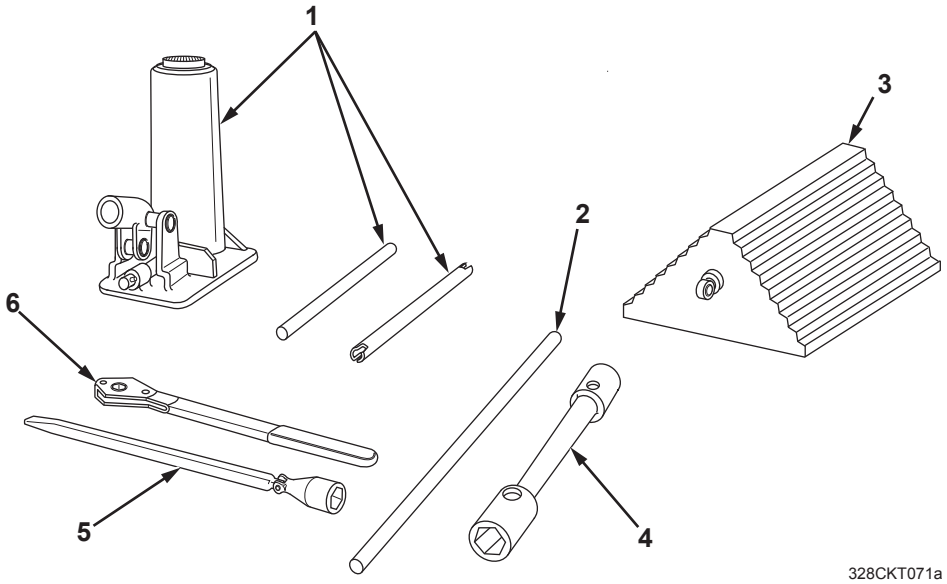

Table 2. Basic Issue Items (BII) List for XCK2000 and XCK2000E1 Trailers.

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER (NSN)	(3) DESCRIPTION, PART NUMBER/ (CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
1	5120-01-487-6306	JACK, HYDRAULIC, HAND W93227A (2U930)		EA	1
2	5120-01-134-9422	HANDLE, TRUCK WRENCH 32318 (75204)		EA	1
3	4935-01-028-4741	BLOCK, CHOCK 10698121-2 (18876)		EA	2
4	5120-01-487-6301	WRENCH, SOCKET TR3A (75204)		EA	1
5		SOCKET, SOCKET WRENCH 15721542 (24617)		EA	1
6	5120-01-429-6964	WRENCH, RATCHET 15659721 (04GQ9)		EA	1

END OF WORK PACKAGE

FIELD MAINTENANCE
ADDITIONAL AUTHORIZATION LIST (AAL)

INTRODUCTION

Scope

This Work Package (WP) lists additional items you are authorized for the support of the XCK2000 and XCK2000E1 trailers.

General

This list identifies items that do not have to accompany the XCK2000 and XCK 2000E1 trailers and that do not have to be turned in with it. These items are all authorized to you by Common Table of Allowance (CTA), Modified Table of Organization and Equipment (MTOE), Table of Distribution and Allowances (TDA), or Joint Table of Allowances (JTA).

Explanation of Columns in the AAL

Column (1) NATIONAL STOCK NUMBER (NSN). Identifies the stock number of the item to be used for requisition purposes.

Column (2) DESCRIPTION, PART NUMBER/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (3) USABLE ON CODE. When applicable, identifies a code if the item needed is not the same for different models of equipment. These codes are identified below:

Code	Used On
CRV	XCK2000
RAY	XCK2000E1

Column (4) U/I. Unit of Issue indicates the physical measurement or count of the item as issued per the NSN shown in column (1).

Column (5) QTY RECM. Indicates the quantity recommended.

There are no additional items authorized for the support of the XCK2000 and XCK 2000E1 trailers.

END OF WORK PACKAGE

FIELD MAINTENANCE
EXPENDABLE AND DURABLE ITEMS LIST

INTRODUCTION

Scope

This Work Package (WP) lists expendable and durable items that you will need to operate and maintain the XCK2000 and XCK2000E1 trailers. This list is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items); CTA 50-909, Field and Garrison Furnishings and Equipment; or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanation of Columns in the Expendable and Durable Items List

Column (1) ITEM NO. The number assigned to the entry in the list and referenced in the narrative instructions to identify the item (e.g., Use adhesive (WP 0091, Item 1)).

Column (2) LEVEL. Identifies the lowest level of maintenance that requires the listed item: C = Crew, F = Field, H = Below Depot, or D = Depot.

Column (3) NATIONAL STOCK NUMBER (NSN). Identifies the stock number of the item to be used for requisition purposes.

Column (4) ITEM NAME, DESCRIPTION, PART NUMBER/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (5) U/I. Unit of Issue indicates the physical measurement or count of an item as issued per the NSN shown in column (3).

Table 1. Expendable and Durable Items List.

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER (NSN)	(4) ITEM NAME, DESCRIPTION, PART NUMBER/ (CAGEC)	(5) U/I
1	F	8040-01-024-6991	ADHESIVE: 50 cc Bottle 3123 (05972)	BT
2	F	8040-00-833-9563	ADHESIVE SEALANT: Silicone Rubber 5 oz (0.14 kg) RTV102–WTT85ML (80936)	KT
3	F	7920-00-514-2417	BRUSH: Acid Swabbing Box of 144 803-12 (7S147)	GR
4	F	7920-00-061-0038	BRUSH: SCRUB 7920-00-061-0038 (83421)	EA
5	C	6850-01-474-2319	CLEANING SOLVENT, TYPE II: 1 Gallon (3.78 L) Can MIL-PRF-680 (81349)	GL
6	C	6850-01-474-2317	CLEANING SOLVENT, TYPE II: 5 Gallon (18.92 L) Can MIL-PRF-680 (81349)	BX
7	C	6850-01-474-2316	CLEANING SOLVENT, TYPE II: 55 Gallon (208.19 L) Drum MIL-PRF-680 (81349)	DR
8	F	8030-01-414-7423	CORROSION PREVENTIVE COMPOUND: Twelve 16 Ounce (0.45 kg) Bottles T32CP90S6 (03GK3)	BX
9	F	8030-01-414-8947	CORROSION PREVENTIVE COMPOUND: 5 Gallon (18.92 L) Can T32P5 (03GK3)	CN
10	C	7930-00-899-9534	DISHWASHING COMPOUND: Hand, 5 Gallon (18.92 L) Can 1064012 (83421)	CN
11	F	9150-01-197-7689	GREASE: Automotive and Artillery, 6.5 Pound (2.94 kg) Can MIL-PRF-10924 (81349)	CN
12	F	9150-00-040-3891	GREASE: Silicone Insulated Electric Motor G305 (08125)	EA
13	F	9150-01-048-4591	OIL: Lubricating, Gear, 1 Quart (0.946 L) Can M2105-1-85W140 (81349)	CN

Table 1. Expendable and Durable Items List - Continued.

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER (NSN)	(4) ITEM NAME, DESCRIPTION, PART NUMBER/ (CAGEC)	(5) U/I
14	F	9150-00-111-3199	OIL: Lubricating, 10W Grade, 5 Gallon (18.92 L) Can MIL-PRF-21260 (81349)	GL
15	C	7920-00-205-1711	RAG: Wiping, 50 Pound (22.67 kg) Bale 7920-00-205-1711 (80244)	BE
16	F	3439-00-265-7102	SOLDER: Lead, Alloy 1.0 Pound (0.45 kg) Roll SN10WRP 20.63 (81346)	RO
17	F	9905-00-537-8954	TAG: Marker, Bundle of 50 9905-00-537-8954 (64067)	BD
18	F	8030-00-889-3535	TAPE: Antiseizing 0.5 in. width, 260 in. Roll A-A-58092 (58536)	RO
19	F	5640-00-103-2254	TAPE: Duct, 2 inch (5.08 cm) Width, 60 yard (5486.4 cm) Length 179K70 (39428)	RO
20	F	5970-00-184-2002	TAPE: Insulation, Electrical 1756654 (80064)	RO
21	F	5970-00-815-1295	TUBING: Heat Shrinkable M23053/5-106-0 (81343)	FT

END OF WORK PACKAGE

FIELD MAINTENANCE
TOOL IDENTIFICATION LIST (TIL)

Scope

This Work Package (WP) lists all common tools and supplements and special tools/fixtures needed to maintain the XCK2000 and XCK2000E1 trailers.

Contact the Field Maintenance shop to determine tool replacement and tool warranty.

Explanation of Columns in the TIL

Column (1) - Item Number. This number is assigned to the entry in the list and is referenced in the initial setup to identify the item (e.g., Extractor (WP 0090, Item 32)).

Column (2) - Item Name. This column lists the item by noun nomenclature and other descriptive features (e.g., Gauge, belt tension).

Column (3) - National Stock Number (NSN). This is the National Stock Number (NSN) assigned to the item; use it to requisition the item.

Column (4) - Part Number/(CAGEC). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity) which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items. The manufacturer's Commercial and Government Entity Code (CAGEC) is also included.

Column (5) - Reference. This column identifies the authorizing supply catalog or RPSTL for items listed in this WP.

Table 1. Tool Identification List (TIL).

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER (NSN)	(4) PART NUMBER /(CAGEC)	(5) REFERENCE
1	Die set, metal stamping	----	KTC S1001 (00NS2)	SATS (SC 4910-95-A81)
2	Drill	----	KTC S0191 (00NS2)	SATS (SC 4910-95-A81)
3	Drill set	----	KTC S0194 (00NS2)	SATS (SC 4910-95-A81)
4	Gloves, chemical and oil protective	8145-00-266-8675	N36 (86523)	
5	Multimeter	----	KTC S0252 (00NS2)	SATS (SC 4910-95-A81)
6	Ratchet, 3/4 in. drive	----	KTC S0387 (00NS2)	SATS (SC 4910-95-A81)

Table 1. Tool Identification List (TIL) - Continued.

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER (NSN)	(4) PART NUMBER /(CAGEC)	(5) REFERENCE
7	Ratchet, 1 in. drive	-—	KTC S1486 (00NS2)	SATS (SC 4910-95-A81)
8	Retaining ring pliers set	-—	KTC S0260 (00NS2)	SATS (SC 4910-95-A81)
9	Socket, 1-1/8 in., 3/4 in. drive	-—	KTC S0972 (00NS2)	SATS (SC 4910-95-A81)
10	Socket, 1-5/16 in., 3/4 in. drive	-—	KTC S0974 (00NS2)	SATS (SC 4910-95-A81)
11	Socket, 2-5/8 in., 1 in. drive	-—	KTC S1481 (00NS2)	SATS (SC 4910-95-A81)
12	Soldering gun	-—	KTC S0695 (00NS2)	SATS (SC 4910-95-A81)
13	Soldering gun kit	3439-00-808-0528	10106117 (18876)	
14	Tool Kit, Electrical	5180-00-876-9336	5180-00-876-9336 (80244)	
15	Tool Kit, General Mechanic's	5180-01-587-7823	KIT GMTK-5 (00NS2)	
16	Tool Set, Standard Automotive, Base	4910-01-490-6453	KTC-S2000 (00NS2)	SC 4910-95-A81
17	Torque multiplier	-—	KTC S0253 (00NS2)	SATS (SC 4910-95-A81)
18	Torque wrench, 3/8 in. drive, 0 to 75 lb-ft (0 to 102 N•m)	-—	KTC S0989 (00NS2)	SATS (SC 4910-95-A81)
19	Torque wrench, 3/4 in. drive, 0 to 600 lb-ft (0 to 813 N•m)	-—	KTC S0988 (00NS2)	SATS (SC 4910-95-A81)
20	Torque wrench, 1 in. drive, 200 to 1000 lb-ft (271 to 1356 N•m)	5120-01-474-5099	QD5R1000	
21	Wrench, open end, 1-1/4 in. x 1-5/16 in.	-—	KTC S0851 (00NS2)	SATS (SC 4910-95-A81)

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RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA.	Use Part II *(reverse)* for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE *Date you filled out this form.*
TO *(Forward to proponent of publication or form) (Include ZIP Code)* U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-IMP/TECH PUBS MS 727 6501 E. 11 Mile Road, Warren, MI 48397-5000	**FROM** *(Activity and location) (Include ZIP Code)* *Your mailing address*	

PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM Number	*Date of the TM*	*Title of the TM*

ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON (Exact wording of recommended change must be given)
	0007-3					*Figure 2, Item 9 should show a lockwasher. Currently shows a flat washer.*
	0018-2					*Cleaning and inspection, Step 6, reference to governor support pin (14) is wrong reference. Reference should be change to (12).*

SAMPLE

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
Your Name	*Your Phone Number*	*Your Signature*

TO *(Forward direct to addressee listed in publication)*	**FROM** *(Activity and location) (Include ZIP Code)*	**DATE**
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PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM Number	*Date of the TM*	*Title of the TM*

PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

SAMPLE

PART III – REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
Your Name	*Your Phone Number*	*Your Signature*

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS

For use of this form, see AR 25-30; the proponent agency is OAASA.

Use Part II *(reverse)* for Repair Parts and Special Tools Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM)

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PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM 9-2330-328-13&P	07 DECEMBER 2015	OPERATOR AND FIELD MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST FOR CHASSIS, CONTAINERIZED KITCHEN TRAILER: 7 1/2-TON, 4-WHEEL, XCK2000, TRAILER: 7 1/2-TON, 4-WHEEL XCK2000E1

ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON (Exact wording of recommended change must be given)

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

TO: *(Forward direct to addressee listed in publication)* U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-IMP/TECH PUBS MS 727 6501 E. 11 Mile Road, Warren, MI 48397-5000	**FROM:** *(Activity and location)(Include Zip Code)*	**DATE**

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PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III – REMARKS *(Any general remarks, or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS

For use of this form, see AR 25-30; the proponent agency is OAASA.

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PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

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ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON (Exact wording of recommended change must be given)

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

TO: *(Forward direct to addressee listed in publication)* U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-IMP/TECH PUBS MS 727 6501 E. 11 Mile Road, Warren, MI 48397-5000	**FROM:** *(Activity and location)(Include Zip Code)*	**DATE**

PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

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PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III – REMARKS *(Any general remarks, or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS

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PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM 9-2330-328-13&P	07 DECEMBER 2015	OPERATOR AND FIELD MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST FOR CHASSIS, CONTAINERIZED KITCHEN TRAILER: 7 1/2-TON, 4-WHEEL, XCK2000, TRAILER: 7 1/2-TON, 4-WHEEL XCK2000E1

ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON (Exact wording of recommended change must be given)

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

TO: *(Forward direct to addressee listed in publication)* U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-IMP/TECH PUBS MS 727 6501 E. 11 Mile Road, Warren, MI 48397-5000	**FROM:** *(Activity and location)(Include Zip Code)*	**DATE**

PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION NUMBER	DATE	TITLE
TM 9-2330-328-13&P	07 DECEMBER 2015	OPERATOR AND FIELD MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST FOR CHASSIS, CONTAINERIZED KITCHEN TRAILER: 7 1/2-TON, 4-WHEEL, XCK2000, TRAILER: 7 1/2-TON, 4-WHEEL XCK2000E1

PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III – REMARKS *(Any general remarks, or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS

For use of this form, see AR 25-30; the proponent agency is OAASA.

Use Part II *(reverse)* for Repair Parts and Special Tools Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM)

DATE

TO: *(Forward to proponent of publication or form) (Include ZIP Code)*
U.S. Army TACOM Life Cycle Management Command
ATTN: AMSTA-LCL-IMP/TECH PUBS MS 727
6501 E. 11 Mile Road, Warren, MI 48397-5000

FROM *(Activity and location) (Include ZIP Code)*

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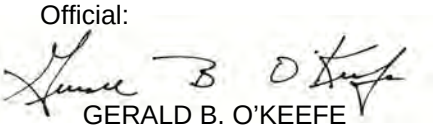
By Order of the Secretary of the Army:

MARK A. MILLEY
General, United States Army
Chief of Staff

Official:



GERALD B. O'KEEFE
Administrative Assistant to the
Secretary of the Army
1531703

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THE METRIC SYSTEM AND EQUIVALENTS

Linear Measure

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

Weights

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 Pounds
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

Liquid Measure

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

Square Measure

1 Sq Centimeter = 100 Sq Millimeter = 0.155 Sq Inches
1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet
1 Sq Kilometer = 1,000,000 Sq Meters = 0.0386 Sq Miles

Cubic Measure

1 Cu Centimeter = 1,000 Cu Millimeters = 0.06 Cu Inches
1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

Temperature

9/5 °C +32 = °F
5/9 (°F - 32) = °C
212° Fahrenheit is equivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius

APPROXIMATE CONVERSION FACTORS

To Change	To	Multiply By
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Sq Inches	Sq Centimeters	6.451
Sq Feet	Sq Meters	0.093
Sq Yards	Sq Meters	0.836
Sq Miles	Sq Kilometers	2.590
Acres	Sq Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Sq Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

To Change	To	Multiply By
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Sq Centimeters	Sq Inches	0.155
Sq Meters	Sq Feet	10.764
Sq Meters	Sq Yards	1.196
Sq Kilometers	Sq Miles	0.386
Sq Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Sq Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621

PIN: 105786-000